CRWMS/M&O

Design Analysis Cover Sheet

Complete only applicable items.

(1.)

QA: N/A

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2. DESIGN ANALYSIS TITLE gah 1/29/96	
Spent Nuclear Fuel Number Densities For Multi-Purpose Canister Criticality Calculations (SCPB: N/A)	
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12. REMARKS

This is an approved SCOPING Design Analysis. The QAP-2-0 Activitiy Evaluation, "Perform Criticality, Thermal, Structural, and Shielding Scoping Analysis", DI#: BB0000000-01717-2200-00026 REV 01, lists the procedural controls which are required. Therefore, this design analysis is NOT *subject to the QAP 3-series procedures and does not require QAP-3-9 signatures. All information contained in this analysis is TBV and has received a technical review only.*

2. DESIGN ANALYSIS TITLE gch 1/29/96

Spent Nuclear Fuel Number Densities For Multi-Purpose Canister Criticality Calculations

3. DOCUMENT IDENTIFIER (Including Rev. No.)

BBAB00000-01717-0200-00005 REV 00

4. Revision No.	5. Description of Revision
00	Issued Approved

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1. Purpose -

The purpose of this analysis is to calculate the number densities for spent nuclear fuel (SNF) to be used in criticality evaluations of the Multi-Purpose Canister (MPC) waste packages. The objective of this analysis is to provide material number density information which will be referenced by future MPC criticality design analyses, such as for those supporting the Conceptual Design Report.

2. Quality Assurance -

The QA program applies to this analysis. The results from this analysis will be used/referenced in future MPC waste package criticality design analyses. The MPC waste package has been identified as an MGDS Q-List item important to radiological safety (Reference 5.1). The work performed for this analysis is covered by Activity Evaluation *Perform Criticality, Thermal, Structural, and Shielding Scoping Analyses SCPB: N/A* (Reference 5.2). This QAP-2-0 evaluation determined such activities to be subject to *Quality Assurance Requirements and Description* (QARD)(Reference 5.3) requirements. Applicable procedural controls are listed in the evaluation.

Design inputs in this document are in support of preliminary design. The design inputs will require further engineering evaluation if used to directly support final design activities. Therefore, any results presented in this document that are to be used for procurement, fabrication, or construction need to be clearly identified, tracked as TBV (to be verified), and controlled by the appropriate procedures.

3. Method -

The design method used in this analysis consisted of the calculation of material number densities using a standard equation. Isotopic weight percentage compositions, physical (densities), and nuclear (atomic weights) data for the SNF were entered into a spreadsheet and number densities were calculated. The calculated number densities may be converted into the appropriate units and formats, for entry into criticality computer codes.

The procedure followed for performing the design analysis consisted of the following:

A. Identify the desired SNF characteristics
B. Retrieve the isotopic composition information from the Characteristcs Data Base
C. Locate density information for SNF
D. Locate the nuclear data (atomic weights) for the isotopes in the SNF
E. Enter the number density equation into a Lotus 1-2-3 spreadsheet
F. Import the isotopic and nuclear data (atomic weights) into the spreadsheet
G. Calculate the material number densities.

4. Design Inputs -

All design inputs are for preliminary design; some or all of these design inputs will require subsequent qualification (or superseding inputs) as the waste package design proceeds to final design.

4.1 Design Parameters -

The units employed in this analysis are the industry standard units reported in the references (i.e., cm, atom/barn cm, etc.). The units were not converted to program standard units (i.e., m, mm, kg, etc.). The neutronics codes cannot use the program standard units as inputs.

4.1.1 SNF Isotopic Compositions

The SNF isotopic compositions listed in this section are taken from the Light Water Reactor Radiological Characteristics Data Base (CDB) (see Section 6.2) which has been qualified in according with M&O QA procedures.

4.1.1 Isotopic Composition of PWR SNF with 3.00 wt% U-235 initial enrichment, 20 GWd/MTU burnup, and decay ages 1 to 1,000,000 years (Weight %)

4.1.1.1 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-1 year

Isotope	g/MTIHM	Weight %
O 16	134300	12.05731
Rh103	308	0.027652
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	0.09884	8.9E-06
Eu153	59.07	0.005303
Gd155	0.7426	0.000067
U233	0.001026	9.2E-08
U234	200.4	0.017992
U235	13020	1.168921
U236	2926	0.262693
U238	955900	85.81966
Np237	226.9	0.020371
Pu238	42.28	0.003796
Pu239	4535	0.407147
Pu240	1307	0.117341
Pu241	748.6	0.067208
Pu242	158.3	0.014212
Am241	53.79	0.004829
Am242m	0.5954	0.000053
Am243	17.85	0.001603
Cm245	0.06129	5.5E-06
Total:	1113847	100.00%

4.1.1.2 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-2 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05729
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	0.1876	0.000017
Eu153	59.07	0.005303
Gd155	1.356	0.000122
U233	0.001106	9.9E-08
U234	200.8	0.018028
U235	13020	1.16892
U236	2926	0.262693
U238	955900	85.81956
Np237	227	0.02038
Pu238	42.54	0.003819
Pu239	4535	0.407147
Pu240	1307	0.117341
Pu241	713.4	0.064048
Pu242	158.3	0.014212
Am241	88.85	0.007977
Am242m	0.5927	0.000053
Am243	17.85	0.001603
Cm245	0.06128	5.5E-06
Total:	1113849	100.00%

4.1.1.3 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-3 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.0573
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	0.2758	0.000025
Eu153	59.07	0.005303
Gd155	1.89	0.00017
U233	0.001186	1.1E-07
U234	201.1	0.018055
U235	13020	1.16892
U236	2926	0.262693
U238	955900	85.81957
Np237	227.1	0.020389
Pu238	42.33	0.0038
Pu239	4534	0.407057
Pu240	1307	0.117341
Pu241	679.9	0.061041
Pu242	158.3	0.014212
Am241	122.3	0.01098
Am242m	0.59	0.000053
Am243	17.85	0.001603
Cm245	0.06127	5.5E-06
Total:	1113848	100.00%

4.1.1.4 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-5 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05728
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	0.45	0.00004
Eu153	59.07	0.005303
Gd155	2.758	0.000248
U233	0.00134	1.2E-07
U234	201.8	0.018117
U235	13020	1.168919
U236	2926	0.262693
U238	955900	85.81949
Np237	227.7	0.020443
Pu238	41.71	0.003745
Pu239	4534	0.407057
Pu240	1307	0.117341
Pu241	617.4	0.055429
Pu242	158.3	0.014212
Am241	184.2	0.016537
Am242m	0.5846	0.000052
Am243	17.84	0.001602
Cm245	0.06126	5.5E-06
Total:	1113850	100.00%

4.1.1.5 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-10 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05725
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	0.874	0.000078
Eu153	59.07	0.005303
Gd155	4.11	0.000369
U233	0.001704	1.5E-07
U234	203.4	0.018261
U235	13020	1.168916
U236	2927	0.262782
U238	955900	85.81928
Np237	229.7	0.020622
Pu238	40.1	0.0036
Pu239	4534	0.407056
Pu240	1307	0.117341
Pu241	485.4	0.043578
Pu242	158.3	0.014212
Am241	314.2	0.028208
Am242m	0.5715	0.000051
Am243	17.83	0.001601
Cm245	0.06124	5.5E-06
Total:	1113852	100.00%

4.1.1.6 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-15 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05715
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	1.282	0.000115
Eu153	59.07	0.005303
Gd155	4.783	0.000429
U233	0.002072	1.9E-07
U234	204.9	0.018395
U235	13030	1.169804
U236	2927	0.262779
U238	955900	85.81851
Np237	232.6	0.020882
Pu238	38.56	0.003462
Pu239	4533	0.406962
Pu240	1307	0.117339
Pu241	381.5	0.03425
Pu242	158.3	0.014212
Am241	415.1	0.037267
Am242m	0.5586	0.00005
Am243	17.82	0.0016
Cm245	0.06121	5.5E-06
Total:	1113862	100.00%

4.1.1.7 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-20 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05715
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	1.675	0.00015
Eu153	59.07	0.005303
Gd155	5.117	0.000459
U233	0.002445	2.2E-07
U234	206.4	0.01853
U235	13030	1.169804
U236	2928	0.262869
U238	955900	85.81854
Np237	236.2	0.021206
Pu238	37.08	0.003329
Pu239	4532	0.406873
Pu240	1306	0.11725
Pu241	299.9	0.026924
Pu242	158.3	0.014212
Am241	493	0.04426
Am242m	0.546	0.000049
Am243	17.81	0.001599
Cm245	0.06119	5.5E-06
Total:	1113862	100.00%

4.1.1.8 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-30 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05714
Rh103	308.1	0.02766
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	2.416	0.000217
Eu153	59.07	0.005303
Gd155	5.366	0.000482
U233	0.00321	2.9E-07
U234	209.3	0.01879
U235	13030	1.169803
U236	2929	0.262959
U238	955900	85.81847
Np237	244.9	0.021987
Pu238	34.28	0.003078
Pu239	4531	0.406783
Pu240	1306	0.11725
Pu241	185.3	0.016636
Pu242	158.3	0.014212
Am241	598.8	0.053759
Am242m	0.5216	0.000047
Am243	17.8	0.001598
Cm245	0.06114	5.5E-06
Total:	1113863	100.00%

4.1.1.9 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-50 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05716
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	3.737	0.000335
Eu153	59.07	0.005303
Gd155	5.442	0.000489
U233	0.004834	4.3E-07
U234	214.3	0.019239
U235	13030	1.169805
U236	2932	0.263229
U238	955900	85.81862
Np237	265.6	0.023845
Pu238	29.3	0.00263
Pu239	4528	0.406514
Pu240	1303	0.116981
Pu241	70.76	0.006353
Pu242	158.3	0.014212
Am241	692.3	0.062153
Am242m	0.4762	0.000043
Am243	17.77	0.001595
Cm245	0.06103	5.5E-06
Total:	1113861	100.00%

4.1.1.10 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-100 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.0571
Rh103	308.1	0.02766
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	6.274	0.000563
Eu153	59.07	0.005303
Gd155	5.448	0.000489
U233	0.009507	8.5E-07
U234	223.9	0.020101
U235	13040	1.170697
U236	2939	0.263856
U238	955900	85.81819
Np237	321.5	0.028863
Pu238	19.81	0.001778
Pu239	4522	0.405973
Pu240	1296	0.116351
Pu241	6.376	0.000572
Pu242	158.3	0.014212
Am241	699.9	0.062835
Am242m	0.3791	0.000034
Am243	17.68	0.001587
Cm245	0.06079	5.5E-06
Total:	1113866	100.00%

4.1.1.11 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-200 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05712
Rh103	308.1	0.02766
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	9.174	0.000824
Eu153	59.07	0.005303
Gd155	5.448	0.000489
U233	0.02141	1.9E-06
U234	234.7	0.021071
U235	13050	1.171597
U236	2952	0.265023
U238	955900	85.81834
Np237	424.3	0.038093
Pu238	9.065	0.000814
Pu239	4509	0.404807
Pu240	1283	0.115185
Pu241	0.05186	4.7E-06
Pu242	158.3	0.014212
Am241	601.8	0.054028
Am242m	0.2403	0.000022
Am243	17.52	0.001573
Cm245	0.0603	5.4E-06
Total:	1113864	100.00%

4.1.1.12 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-300 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05705
Rh103	308.1	0.02766
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	10.51	0.000944
Eu153	59.07	0.005303
Gd155	5.448	0.000489
U233	0.03635	3.3E-06
U234	239.7	0.02152
U235	13070	1.173385
U236	2966	0.266279
U238	955900	85.81782
Np237	512.1	0.045975
Pu238	4.162	0.000374
Pu239	4496	0.403637
Pu240	1269	0.113927
Pu241	0.000523	4.7E-08
Pu242	158.3	0.014212
Am241	512.7	0.046029
Am242m	0.1523	0.000014
Am243	17.35	0.001558
Cm245	0.05981	5.4E-06
Total:	1113871	100.00%

4.1.1.13 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-500 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05714
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	11.43	0.001026
Eu153	59.07	0.005303
Gd155	5.448	0.000489
U233	0.07356	6.6E-06
U234	242.9	0.021807
U235	13090	1.17519
U236	2992	0.268615
U238	955900	85.8185
Np237	650.5	0.0584
Pu238	0.8906	0.00008
Pu239	4470	0.401306
Pu240	1242	0.111504
Pu241	0.000098	8.8E-09
Pu242	158.3	0.014212
Am241	372	0.033397
Am242m	0.06118	5.5E-06
Am243	17.03	0.001529
Cm245	0.05884	5.3E-06
Total:	1113862	100.00%

4.1.1.14 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-1000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05721
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	11.67	0.001048
Eu153	59.07	0.005303
Gd155	5.448	0.000489
U233	0.195	0.000018
U234	243.5	0.021861
U235	13150	1.180583
U236	3055	0.274272
U238	955900	85.81899
Np237	852.2	0.076509
Pu238	0.0228	2.0E-06
Pu239	4408	0.395742
Pu240	1179	0.105849
Pu241	0.000094	8.5E-09
Pu242	158.1	0.014194
Am241	166.8	0.014975
Am242m	0.006258	5.6E-07
Am243	16.24	0.001458
Cm245	0.05649	5.1E-06
Total:	1113856	100.00%

4.1.1.15 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-2000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05721
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	11.68	0.001049
Eu153	59.07	0.005303
Gd155	5.448	0.000489
U233	0.4911	0.000044
U234	243	0.021816
U235	13280	1.192254
U236	3173	0.284866
U238	955900	85.81895
Np237	982.9	0.088243
Pu238	0.000039	3.5E-09
Pu239	4284	0.38461
Pu240	1060	0.095165
Pu241	0.000087	7.8E-09
Pu242	157.9	0.014176
Am241	33.56	0.003013
Am242m	0.000065	5.9E-09
Am243	14.8	0.001329
Cm245	0.05206	4.7E-06
Total:	1113857	100.00%

4.1.1.16 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-5000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05734
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	11.68	0.001049
Eu153	59.07	0.005303
Gd155	5.448	0.000489
U233	1.442	0.000129
U234	241.3	0.021664
U235	13630	1.22369
U236	3457	0.310367
U238	955900	85.81991
Np237	1015	0.091126
Pu238	8.4E-11	7.5E-15
Pu239	3933	0.353101
Pu240	771	0.06922
Pu241	0.000068	6.1E-09
Pu242	157	0.014095
Am241	0.2754	0.000025
Am242m	7.5E-11	6.7E-15
Am243	11.16	0.001002
Cm245	0.04076	3.7E-06
Total:	1113844	100.00%

4.1.1.17 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-10000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05742
Rh103	308.1	0.027661
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	11.68	0.001049
Eu153	59.07	0.005303
Gd155	5.448	0.000489
U233	3.008	0.00027
U234	238.7	0.02143
U235	14160	1.271281
U236	3770	0.33847
U238	955900	85.82046
Np237	1013	0.090947
Pu238	1.0E-20	9.4E-25
Pu239	3409	0.306059
Pu240	453.8	0.040742
Pu241	0.000045	4.1E-09
Pu242	155.6	0.01397
Am241	0.001452	1.3E-07
Am242m	9.4E-21	8.4E-25
Am243	6.977	0.000626
Cm245	0.02711	2.4E-06
Total:	1113837	100.00%

4.1.1.18 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-20000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05759
Rh103	308.1	0.027662
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	11.68	0.001049
Eu153	59.07	0.005303
Gd155	5.448	0.000489
U233	6.032	0.000542
U234	233.5	0.020964
U235	15010	1.347613
U236	4062	0.36469
U238	955900	85.82167
Np237	1010	0.090679
Pu238	1.6E-40	1.5E-44
Pu239	2560	0.229839
Pu240	157.2	0.014114
Pu241	0.00002	1.8E-09
Pu242	152.9	0.013728
Am241	0.000601	5.4E-08
Am242m	1.5E-40	1.3E-44
Am243	2.727	0.000245
Cm245	0.012	1.1E-06
Total:	1113821	100.00%

4.1.1.19 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-50000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05807
Rh103	308.1	0.027663
Ag109	39.12	0.003512
Sm149	3.471	0.000312
Eu151	11.68	0.001049
Eu153	59.07	0.005304
Gd155	5.448	0.000489
U233	14.29	0.001283
U234	218.7	0.019636
U235	16480	1.479649
U236	4206	0.377634
U238	955900	85.82505
Np237	1000	0.089785
Pu238	0	0
Pu239	1080	0.096967
Pu240	6.53	0.000586
Pu241	1.7E-06	1.6E-10
Pu242	144.8	0.013001
Am241	0.000052	4.7E-09
Am242m	0	0
Am243	0.163	0.000015
Cm245	0.001038	9.3E-08
Total:	1113777	100.00%

4.1.1.20 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-100000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05859
Rh103	308.1	0.027664
Ag109	39.12	0.003513
Sm149	3.471	0.000312
Eu151	11.68	0.001049
Eu153	59.07	0.005304
Gd155	5.448	0.000489
U233	25.67	0.002305
U234	196.6	0.017652
U235	17300	1.55334
U236	4207	0.37774
U238	955900	85.82879
Np237	984.3	0.088379
Pu238	0	0
Pu239	255.9	0.022977
Pu240	0.03255	2.9E-06
Pu241	2.9E-08	2.6E-12
Pu242	132.4	0.011888
Am241	8.8E-07	7.9E-11
Am242m	0	0
Am243	0.001489	1.3E-07
Cm245	0.000018	1.6E-09
Total:	1113729	100.00%

4.1.1.21 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-200000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.05964
Rh103	308.1	0.027666
Ag109	39.12	0.003513
Sm149	3.471	0.000312
Eu151	11.68	0.001049
Eu153	59.07	0.005304
Gd155	5.448	0.000489
U233	41.53	0.003729
U234	160.8	0.014439
U235	17530	1.574128
U236	4195	0.376695
U238	955900	85.83624
Np237	952.9	0.085567
Pu238	0	0
Pu239	14.36	0.001289
Pu240	1.1E-06	9.5E-11
Pu241	8.4E-12	7.6E-16
Pu242	110.7	0.00994
Am241	2.7E-10	2.4E-14
Am242m	0	0
Am243	1.3E-07	1.2E-11
Cm245	5.0E-09	4.5E-13
Total:	1113632	100.00%

4.1.1.22 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-500000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.06204
Rh103	308.1	0.027672
Ag109	39.12	0.003514
Sm149	3.471	0.000312
Eu151	11.68	0.001049
Eu153	59.07	0.005305
Gd155	5.448	0.000489
U233	59.01	0.0053
U234	98.19	0.008819
U235	17540	1.57534
U236	4157	0.373357
U238	955900	85.85334
Np237	864.6	0.077653
Pu238	0	0
Pu239	0.002536	2.3E-07
Pu240	2.4E-07	2.2E-11
Pu241	2.0E-22	1.8E-26
Pu242	64.67	0.005808
Am241	6.3E-21	5.7E-25
Am242m	0	0
Am243	8.2E-09	7.4E-13
Cm245	1.2E-19	1.1E-23
Total:	1113410	100.00%

4.1.1.23 Isotopic Composition (Weight %) of 3.00%-20 GWd/MTU-1000000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.06503
Rh103	308.1	0.027679
Ag109	39.12	0.003514
Sm149	3.471	0.000312
Eu151	11.68	0.001049
Eu153	59.07	0.005307
Gd155	5.448	0.000489
U233	56.82	0.005105
U234	62.78	0.00564
U235	17530	1.574832
U236	4096	0.36797
U238	955900	85.87463
Np237	735.4	0.066066
Pu238	0	0
Pu239	2.7E-08	2.5E-12
Pu240	2.4E-07	2.1E-11
Pu241	3.9E-40	3.5E-44
Pu242	26.41	0.002373
Am241	1.2E-38	1.1E-42
Am242m	0	0
Am243	8.0E-09	7.2E-13
Cm245	2.3E-37	2.1E-41
Total:	1113134	100.00%

4.1.2 Isotopic Composition of PWR SNF with 3.75 wt% U-235 initial enrichment, 37 GWd/MTU burnup, and decay ages 1 to 1,000,000 years (Weight %)

4.1.2.1 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-1 year

Isotope	g/MTIHM	Weight %
O 16	134300	12.24971
Rh103	482.4	0.044
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	0.146	0.000013
Eu153	133.5	0.012177
Gd155	2.113	0.000193
U233	0.00183	1.7E-07
U234	195.5	0.017832
U235	9363	0.854014
U236	4613	0.420759
U238	936100	85.38315
Np237	598.4	0.054581
Pu238	201.8	0.018406
Pu239	5992	0.54654
Pu240	2316	0.211246
Pu241	1282	0.116933
Pu242	471.2	0.042979
Am241	112.9	0.010298
Am242m	2.188	0.0002
Am243	102.2	0.009322
Cm245	1.336	0.000122
Total:	1096352	100.00%

4.1.2.2 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-2 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24965
Rh103	482.5	0.044009
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	0.2773	0.000025
Eu153	133.5	0.012177
Gd155	3.844	0.000351
U233	0.002043	1.9E-07
U234	197.1	0.017978
U235	9363	0.854009
U236	4613	0.420757
U238	936100	85.38269
Np237	598.7	0.054608
Pu238	202.7	0.018488
Pu239	5991	0.546446
Pu240	2318	0.211427
Pu241	1222	0.11146
Pu242	471.2	0.042979
Am241	173	0.01578
Am242m	2.178	0.000199
Am243	102.2	0.009322
Cm245	1.335	0.000122
Total:	1096358	100.00%

4.1.2.3 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-3 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24961
Rh103	482.5	0.044009
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	0.4077	0.000037
Eu153	133.5	0.012177
Gd155	5.349	0.000488
U233	0.002254	2.1E-07
U234	198.8	0.018133
U235	9363	0.854007
U236	4614	0.420847
U238	936100	85.38242
Np237	599	0.054635
Pu238	201.5	0.018379
Pu239	5991	0.546444
Pu240	2319	0.211518
Pu241	1164	0.106169
Pu242	471.2	0.042979
Am241	230	0.020978
Am242m	2.169	0.000198
Am243	102.2	0.009322
Cm245	1.335	0.000122
Total:	1096361	100.00%

4.1.2.4 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-5 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24954
Rh103	482.5	0.044009
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	0.6652	0.000061
Eu153	133.5	0.012177
Gd155	7.797	0.000711
U233	0.002657	2.4E-07
U234	202.1	0.018434
U235	9364	0.854093
U236	4614	0.420844
U238	936100	85.38197
Np237	599.9	0.054717
Pu238	198.5	0.018105
Pu239	5991	0.546441
Pu240	2320	0.211608
Pu241	1058	0.096501
Pu242	471.2	0.042978
Am241	336	0.030647
Am242m	2.149	0.000196
Am243	102.2	0.009322
Cm245	1.335	0.000122
Total:	1096367	100.00%

4.1.2.5 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-10 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24944
Rh103	482.5	0.044009
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	1.292	0.000118
Eu153	133.5	0.012176
Gd155	11.61	0.001059
U233	0.003615	3.3E-07
U234	210.2	0.019172
U235	9364	0.854086
U236	4615	0.420932
U238	936100	85.38123
Np237	603.5	0.055045
Pu238	190.9	0.017412
Pu239	5990	0.546345
Pu240	2325	0.212062
Pu241	831.3	0.075822
Pu242	471.2	0.042978
Am241	558.7	0.050959
Am242m	2.1	0.000192
Am243	102.2	0.009322
Cm245	1.334	0.000122
Total:	1096377	100.00%

4.1.2.6 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-15 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24937
Rh103	482.5	0.044008
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	1.896	0.000173
Eu153	133.5	0.012176
Gd155	13.51	0.001232
U233	0.00458	4.2E-07
U234	217.8	0.019865
U235	9364	0.854081
U236	4617	0.421112
U238	936100	85.38072
Np237	608.6	0.05551
Pu238	183.5	0.016737
Pu239	5989	0.546251
Pu240	2328	0.212335
Pu241	653.5	0.059605
Pu242	471.2	0.042978
Am241	731.3	0.066701
Am242m	2.053	0.000187
Am243	102.1	0.009312
Cm245	1.334	0.000122
Total:	1096383	100.00%

4.1.2.7 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-20 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.2493
Rh103	482.5	0.044008
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	2.476	0.000226
Eu153	133.5	0.012176
Gd155	14.45	0.001318
U233	0.005554	5.1E-07
U234	225.2	0.02054
U235	9365	0.854168
U236	4618	0.421201
U238	936100	85.38027
Np237	615	0.056093
Pu238	176.5	0.016098
Pu239	5989	0.546248
Pu240	2330	0.212516
Pu241	513.7	0.046854
Pu242	471.2	0.042977
Am241	864.7	0.078868
Am242m	2.006	0.000183
Am243	102.1	0.009312
Cm245	1.333	0.000122
Total:	1096389	100.00%

4.1.2.8 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-30 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.2492
Rh103	482.5	0.044008
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	3.571	0.000326
Eu153	133.5	0.012176
Gd155	15.16	0.001383
U233	0.007536	6.9E-07
U234	238.9	0.02179
U235	9369	0.854525
U236	4620	0.42138
U238	936100	85.37956
Np237	630.2	0.057479
Pu238	163.1	0.014876
Pu239	5987	0.546061
Pu240	2333	0.212788
Pu241	317.4	0.028949
Pu242	471.2	0.042977
Am241	1046	0.095403
Am242m	1.917	0.000175
Am243	102	0.009303
Cm245	1.332	0.000121
Total:	1096398	100.00%

4.1.2.9 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-50 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24912
Rh103	482.5	0.044007
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	5.526	0.000504
Eu153	133.5	0.012176
Gd155	15.37	0.001402
U233	0.01166	1.1E-06
U234	263.5	0.024033
U235	9371	0.854702
U236	4625	0.421833
U238	936100	85.37901
Np237	666.5	0.06079
Pu238	139.5	0.012723
Pu239	5984	0.545784
Pu240	2334	0.212877
Pu241	121.3	0.011063
Pu242	471.2	0.042977
Am241	1205	0.109905
Am242m	1.75	0.00016
Am243	101.8	0.009285
Cm245	1.33	0.000121
Total:	1096405	100.00%

4.1.2.10 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-100 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24901
Rh103	482.5	0.044007
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	9.278	0.000846
Eu153	133.5	0.012176
Gd155	15.39	0.001404
U233	0.02304	2.1E-06
U234	309.8	0.028256
U235	9381	0.855606
U236	4638	0.423015
U238	936100	85.37822
Np237	764	0.069682
Pu238	94.19	0.008591
Pu239	5976	0.545049
Pu240	2326	0.212146
Pu241	10.92	0.000996
Pu242	471.3	0.042986
Am241	1217	0.110998
Am242m	1.393	0.000127
Am243	101.3	0.009239
Cm245	1.325	0.000121
Total:	1096415	100.00%

4.1.2.11 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-200 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24897
Rh103	482.5	0.044007
Ag109	78.52	0.007161
Sm149	3.98	0.000363
Eu151	13.57	0.001238
Eu153	133.5	0.012176
Gd155	15.39	0.001404
U233	0.05028	4.6E-06
U234	361.7	0.032989
U235	9400	0.857337
U236	4661	0.425111
U238	936100	85.37799
Np237	943.2	0.086026
Pu238	43.02	0.003924
Pu239	5960	0.543588
Pu240	2302	0.209956
Pu241	0.09112	8.3E-06
Pu242	471.3	0.042985
Am241	1046	0.095402
Am242m	0.8829	0.000081
Am243	100.4	0.009157
Cm245	1.314	0.00012
Total:	1096418	100.00%

4.1.2.12 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-300 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24901
Rh103	482.5	0.044007
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	15.55	0.001418
Eu153	133.5	0.012176
Gd155	15.39	0.001404
U233	0.08279	7.6E-06
U234	385.4	0.035151
U235	9414	0.858616
U236	4686	0.427393
U238	936100	85.37824
Np237	1096	0.099962
Pu238	19.7	0.001797
Pu239	5943	0.542039
Pu240	2278	0.207768
Pu241	0.002991	2.7E-07
Pu242	471.2	0.042976
Am241	891.1	0.081274
Am242m	0.5597	0.000051
Am243	99.41	0.009067
Cm245	1.304	0.000119
Total:	1096415	100.00%

4.1.2.13 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-500 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24905
Rh103	482.5	0.044007
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	16.89	0.00154
Eu153	133.5	0.012176
Gd155	15.39	0.001404
U233	0.1606	0.000015
U234	401	0.036574
U235	9450	0.861902
U236	4732	0.43159
U238	936100	85.37849
Np237	1336	0.121852
Pu238	4.181	0.000381
Pu239	5911	0.539122
Pu240	2230	0.203391
Pu241	0.002141	2.0E-07
Pu242	471.1	0.042967
Am241	646.7	0.058983
Am242m	0.2249	0.000021
Am243	97.56	0.008898
Cm245	1.282	0.000117
Total:	1096412	100.00%

4.1.2.14 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-1000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24912
Rh103	482.5	0.044007
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	17.25	0.001573
Eu153	133.5	0.012176
Gd155	15.39	0.001404
U233	0.4044	0.000037
U234	404.7	0.036912
U235	9534	0.869569
U236	4846	0.44199
U238	936100	85.379
Np237	1688	0.153958
Pu238	0.1013	9.2E-06
Pu239	5831	0.531829
Pu240	2115	0.192903
Pu241	0.002055	1.9E-07
Pu242	470.7	0.042931
Am241	290	0.02645
Am242m	0.023	2.1E-06
Am243	93.12	0.008493
Cm245	1.231	0.000112
Total:	1096405	100.00%

4.1.2.15 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-2000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24921
Rh103	482.5	0.044008
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	17.26	0.001574
Eu153	133.5	0.012176
Gd155	15.39	0.001404
U233	0.9848	0.00009
U234	403.9	0.036839
U235	9700	0.884716
U236	5056	0.461147
U238	936100	85.37964
Np237	1915	0.174663
Pu238	0.000151	1.4E-08
Pu239	5674	0.517513
Pu240	1902	0.173477
Pu241	0.001894	1.7E-07
Pu242	469.9	0.042859
Am241	58.4	0.005327
Am242m	0.000241	2.2E-08
Am243	84.74	0.007729
Cm245	1.135	0.000104
Total:	1096397	100.00%

4.1.2.16 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-5000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24936
Rh103	482.5	0.044008
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	17.26	0.001574
Eu153	133.5	0.012176
Gd155	15.39	0.001404
U233	2.831	0.000258
U234	400.8	0.036557
U235	10170	0.927595
U236	5567	0.50776
U238	936100	85.3807
Np237	1970	0.179682
Pu238	3.1E-10	2.8E-14
Pu239	5225	0.476567
Pu240	1384	0.126233
Pu241	0.001483	1.4E-07
Pu242	467.5	0.04264
Am241	0.5274	0.000048
Am242m	2.8E-10	2.5E-14
Am243	63.94	0.005832
Cm245	0.8885	0.000081
Total:	1096384	100.00%

4.1.2.17 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-10000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24959
Rh103	482.5	0.044009
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	17.26	0.001574
Eu153	133.5	0.012177
Gd155	15.39	0.001404
U233	5.872	0.000536
U234	396	0.036119
U235	10870	0.99146
U236	6128	0.558939
U238	936100	85.38229
Np237	1968	0.179503
Pu238	3.9E-20	3.5E-24
Pu239	4546	0.414644
Pu240	814.3	0.074273
Pu241	0.000986	9.0E-08
Pu242	463.3	0.042258
Am241	0.02981	2.7E-06
Am242m	3.5E-20	3.2E-24
Am243	39.98	0.003647
Cm245	0.5908	0.000054
Total:	1096363	100.00%

4.1.2.18 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-20000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.24979
Rh103	482.5	0.04401
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	17.26	0.001574
Eu153	133.5	0.012177
Gd155	15.39	0.001404
U233	11.75	0.001072
U234	386.3	0.035235
U235	12020	1.09637
U236	6651	0.606652
U238	936100	85.38368
Np237	1962	0.178958
Pu238	6.1E-40	5.5E-44
Pu239	3430	0.312858
Pu240	282.1	0.025731
Pu241	0.000436	4.0E-08
Pu242	455.1	0.041511
Am241	0.01309	1.2E-06
Am242m	5.4E-40	5.0E-44
Am243	15.63	0.001426
Cm245	0.2613	0.000024
Total:	1096345	100.00%

4.1.2.19 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-50000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.25062
Rh103	482.5	0.044013
Ag109	78.52	0.007162
Sm149	3.98	0.000363
Eu151	17.26	0.001574
Eu153	133.5	0.012178
Gd155	15.39	0.001404
U233	27.78	0.002534
U234	359	0.032747
U235	14000	1.277057
U236	6912	0.630501
U238	936100	85.38948
Np237	1943	0.177237
Pu238	0	0
Pu239	1454	0.132631
Pu240	11.72	0.001069
Pu241	0.000038	3.4E-09
Pu242	431.3	0.039342
Am241	0.001134	1.0E-07
Am242m	0	0
Am243	0.9339	0.000085
Cm245	0.02263	2.1E-06
Total:	1096271	100.00%

4.1.2.20 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-100000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.25182
Rh103	482.5	0.044017
Ag109	78.52	0.007163
Sm149	3.98	0.000363
Eu151	17.26	0.001575
Eu153	133.5	0.012179
Gd155	15.39	0.001404
U233	49.88	0.00455
U234	318.3	0.029038
U235	15100	1.377532
U236	6913	0.630654
U238	936100	85.39784
Np237	1912	0.174427
Pu238	0	0
Pu239	344.7	0.031446
Pu240	0.05841	5.3E-06
Pu241	6.4E-07	5.8E-11
Pu242	394.4	0.03598
Am241	0.000019	1.8E-09
Am242m	0	0
Am243	0.00853	7.8E-07
Cm245	0.000383	3.5E-08
Total:	1096163	100.00%

4.1.2.21 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-200000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.2528
Rh103	482.5	0.044021
Ag109	78.52	0.007164
Sm149	3.98	0.000363
Eu151	17.26	0.001575
Eu153	133.5	0.01218
Gd155	15.39	0.001404
U233	80.68	0.007361
U234	252.3	0.023018
U235	15420	1.406837
U236	6892	0.628788
U238	936200	85.41377
Np237	1851	0.168875
Pu238	0	0
Pu239	19.33	0.001764
Pu240	3.7E-06	3.4E-10
Pu241	1.8E-10	1.7E-14
Pu242	329.7	0.03008
Am241	5.8E-09	5.3E-13
Am242m	0	0
Am243	1.5E-06	1.3E-10
Cm245	1.1E-07	1.0E-11
Total:	1096076	100.00%

4.1.2.22 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-500000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.25793
Rh103	482.5	0.044039
Ag109	78.52	0.007167
Sm149	3.98	0.000363
Eu151	17.26	0.001575
Eu153	133.5	0.012185
Gd155	15.39	0.001405
U233	114.6	0.01046
U234	137	0.012504
U235	15430	1.408338
U236	6832	0.623575
U238	936200	85.44954
Np237	1680	0.153338
Pu238	0	0
Pu239	0.003419	3.1E-07
Pu240	2.2E-06	2.0E-10
Pu241	4.3E-21	4.0E-25
Pu242	192.6	0.017579
Am241	1.4E-19	1.3E-23
Am242m	0	0
Am243	6.7E-07	6.1E-11
Cm245	2.6E-18	2.4E-22
Total:	1095617	100.00%

4.1.2.23 Isotopic Composition (Weight %) of 3.75%-37 GWd/MTU-1000000 years

Isotope	g/MTIHM	Weight %
O 16	134300	12.26404
Rh103	482.5	0.044061
Ag109	78.52	0.00717
Sm149	3.98	0.000363
Eu151	17.26	0.001576
Eu153	133.5	0.012191
Gd155	15.39	0.001405
U233	110.4	0.010082
U234	71.5	0.006529
U235	15420	1.408127
U236	6731	0.614663
U238	936200	85.49212
Np237	1429	0.130494
Pu238	0	0
Pu239	2.1E-06	1.9E-10
Pu240	2.2E-06	2.0E-10
Pu241	8.5E-39	7.7E-43
Pu242	78.64	0.007181
Am241	2.7E-37	2.4E-41
Am242m	0	0
Am243	6.5E-07	5.9E-11
Cm245	5.1E-36	4.6E-40
Total:	1095072	100.00%

4.1.3 Isotopic Composition of BWR SNF with 3.00 wt% U-235 initial enrichment, 21 GWd/MTU burnup, and decay ages 1 to 1,000,000 years (Weight %)

4.1.3.1 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-1 year

Isotope	g/MTIHM	Weight %
O 16	134600	12.09327
Rh103	313.8	0.028194
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	0.1107	9.9E-06
Eu153	64.85	0.005827
Gd155	3.65	0.000328
U233	0.001053	9.5E-08
U234	194.4	0.017466
U235	12560	1.128465
U236	3056	0.274569
U238	955000	85.80291
Np237	257.2	0.023108
Pu238	58.66	0.00527
Pu239	4345	0.390381
Pu240	1354	0.121651
Pu241	861.1	0.077366
Pu242	201.9	0.01814
Am241	70.07	0.006296
Am242m	1.115	0.0001
Am243	27.53	0.002473
Cm245	0.1343	0.000012
Total:	1113016	100.00%

4.1.3.2 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-2 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09325
Rh103	313.8	0.028194
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	0.2074	0.000019
Eu153	64.89	0.00583
Gd155	4.411	0.000396
U233	0.001144	1.0E-07
U234	194.9	0.017511
U235	12560	1.128464
U236	3056	0.274569
U238	955000	85.80276
Np237	257.3	0.023117
Pu238	59.18	0.005317
Pu239	4345	0.39038
Pu240	1354	0.121651
Pu241	820.6	0.073727
Pu242	201.9	0.01814
Am241	110.4	0.009919
Am242m	1.11	0.0001
Am243	27.53	0.002473
Cm245	0.1343	0.000012
Total:	1113018	100.00%

4.1.3.3 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-3 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09324
Rh103	313.8	0.028194
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	0.3034	0.000027
Eu153	64.91	0.005832
Gd155	5.064	0.000455
U233	0.001235	1.1E-07
U234	195.4	0.017556
U235	12560	1.128462
U236	3056	0.274569
U238	955000	85.80268
Np237	257.5	0.023135
Pu238	58.93	0.005295
Pu239	4345	0.39038
Pu240	1354	0.121651
Pu241	782.1	0.070268
Pu242	201.9	0.01814
Am241	148.8	0.013369
Am242m	1.105	0.000099
Am243	27.52	0.002473
Cm245	0.1343	0.000012
Total:	1113019	100.00%

4.1.3.4 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-5 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09323
Rh103	313.8	0.028194
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	0.4931	0.000044
Eu153	64.91	0.005832
Gd155	6.118	0.00055
U233	0.001408	1.3E-07
U234	196.3	0.017637
U235	12560	1.128462
U236	3056	0.274569
U238	955000	85.80266
Np237	258.1	0.023189
Pu238	58.06	0.005216
Pu239	4344	0.39029
Pu240	1354	0.121651
Pu241	710.3	0.063817
Pu242	201.9	0.01814
Am241	220	0.019766
Am242m	1.095	0.000098
Am243	27.52	0.002473
Cm245	0.1343	0.000012
Total:	1113019	100.00%

4.1.3.5 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-10 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.0932
Rh103	313.8	0.028194
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	0.955	0.000086
Eu153	64.91	0.005832
Gd155	7.745	0.000696
U233	0.001821	1.6E-07
U234	198.6	0.017843
U235	12560	1.128459
U236	3057	0.274658
U238	955000	85.80242
Np237	260.5	0.023405
Pu238	55.83	0.005016
Pu239	4344	0.390289
Pu240	1354	0.121651
Pu241	558.3	0.050161
Pu242	201.9	0.01814
Am241	369.6	0.033207
Am242m	1.07	0.000096
Am243	27.5	0.002471
Cm245	0.1343	0.000012
Total:	1113022	100.00%

4.1.3.6 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-15 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09319
Rh103	313.8	0.028193
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	1.399	0.000126
Eu153	64.91	0.005832
Gd155	8.549	0.000768
U233	0.002238	2.0E-07
U234	200.8	0.018041
U235	12560	1.128458
U236	3058	0.274747
U238	955000	85.80233
Np237	263.9	0.02371
Pu238	53.7	0.004825
Pu239	4343	0.390198
Pu240	1354	0.121651
Pu241	438.9	0.039433
Pu242	201.9	0.01814
Am241	485.5	0.04362
Am242m	1.046	0.000094
Am243	27.49	0.00247
Cm245	0.1342	0.000012
Total:	1113023	100.00%

4.1.3.7 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-20 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09318
Rh103	313.8	0.028193
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	1.826	0.000164
Eu153	64.91	0.005832
Gd155	8.947	0.000804
U233	0.002661	2.4E-07
U234	202.9	0.01823
U235	12560	1.128457
U236	3059	0.274837
U238	955000	85.80226
Np237	268.1	0.024088
Pu238	51.64	0.00464
Pu239	4342	0.390108
Pu240	1354	0.121651
Pu241	345	0.030997
Pu242	201.9	0.01814
Am241	575.2	0.051679
Am242m	1.022	0.000092
Am243	27.48	0.002469
Cm245	0.1341	0.000012
Total:	1113024	100.00%

4.1.3.8 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-30 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09317
Rh103	313.8	0.028193
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	2.634	0.000237
Eu153	64.91	0.005832
Gd155	9.243	0.00083
U233	0.003531	3.2E-07
U234	206.8	0.01858
U235	12560	1.128456
U236	3060	0.274926
U238	955000	85.8022
Np237	278.2	0.024995
Pu238	47.75	0.00429
Pu239	4341	0.390018
Pu240	1354	0.12165
Pu241	213.2	0.019155
Pu242	201.9	0.01814
Am241	696.7	0.062595
Am242m	0.9767	0.000088
Am243	27.45	0.002466
Cm245	0.134	0.000012
Total:	1113025	100.00%

4.1.3.9 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-50 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09318
Rh103	313.8	0.028193
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	4.074	0.000366
Eu153	64.91	0.005832
Gd155	9.335	0.000839
U233	0.005377	4.8E-07
U234	213.9	0.019218
U235	12560	1.128457
U236	3062	0.275106
U238	955000	85.80225
Np237	302.4	0.027169
Pu238	40.83	0.003668
Pu239	4339	0.389839
Pu240	1352	0.121471
Pu241	81.4	0.007313
Pu242	201.9	0.01814
Am241	804.1	0.072245
Am242m	0.8919	0.00008
Am243	27.4	0.002462
Cm245	0.1338	0.000012
Total:	1113024	100.00%

4.1.3.10 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-100 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09311
Rh103	313.8	0.028193
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	6.836	0.000614
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	0.01071	9.6E-07
U234	227.3	0.020422
U235	12570	1.129349
U236	3069	0.275734
U238	955000	85.80181
Np237	367.4	0.033009
Pu238	27.63	0.002482
Pu239	4333	0.389298
Pu240	1345	0.120841
Pu241	7.334	0.000659
Pu242	201.9	0.01814
Am241	812.2	0.072972
Am242m	0.71	0.000064
Am243	27.27	0.00245
Cm245	0.1333	0.000012
Total:	1113030	100.00%

4.1.3.11 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-200 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09313
Rh103	313.8	0.028193
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	9.996	0.000898
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	0.02435	2.2E-06
U234	242.5	0.021787
U235	12580	1.13025
U236	3083	0.276992
U238	955000	85.80194
Np237	486.9	0.043746
Pu238	12.68	0.001139
Pu239	4320	0.38813
Pu240	1331	0.119584
Pu241	0.05977	5.4E-06
Pu242	201.9	0.01814
Am241	698.3	0.062739
Am242m	0.45	0.00004
Am243	27.02	0.002428
Cm245	0.1322	0.000012
Total:	1113028	100.00%

4.1.3.12 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-300 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09317
Rh103	313.8	0.028193
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	11.46	0.00103
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	0.0415	3.7E-06
U234	249.5	0.022416
U235	12590	1.131152
U236	3097	0.278251
U238	955000	85.80221
Np237	588.7	0.052892
Pu238	5.846	0.000525
Pu239	4308	0.387053
Pu240	1316	0.118236
Pu241	0.000717	6.4E-08
Pu242	201.9	0.01814
Am241	594.9	0.053449
Am242m	0.2852	0.000026
Am243	26.76	0.002404
Cm245	0.1311	0.000012
Total:	1113025	100.00%

4.1.3.13 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-500 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09314
Rh103	313.8	0.028193
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	12.45	0.001119
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	0.08434	7.6E-06
U234	254.1	0.02283
U235	12620	1.133844
U236	3124	0.280676
U238	955000	85.802
Np237	749.3	0.067321
Pu238	1.266	0.000114
Pu239	4283	0.384806
Pu240	1289	0.11581
Pu241	0.000215	1.9E-08
Pu242	201.9	0.01814
Am241	431.6	0.038777
Am242m	0.1146	0.00001
Am243	26.27	0.00236
Cm245	0.129	0.000012
Total:	1113028	100.00%

4.1.3.14 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-1000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09319
Rh103	313.8	0.028193
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	12.71	0.001142
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	0.2244	0.00002
U234	255.1	0.02292
U235	12680	1.139239
U236	3190	0.286607
U238	955000	85.80233
Np237	983.3	0.088345
Pu238	0.03497	3.1E-06
Pu239	4224	0.379507
Pu240	1223	0.109881
Pu241	0.000207	1.9E-08
Pu242	201.8	0.018131
Am241	193.6	0.017394
Am242m	0.01172	1.1E-06
Am243	25.06	0.002252
Cm245	0.1238	0.000011
Total:	1113023	100.00%

4.1.3.15 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-2000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09326
Rh103	313.8	0.028194
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	12.71	0.001142
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	0.5663	0.000051
U234	254.5	0.022866
U235	12800	1.150028
U236	3310	0.29739
U238	955000	85.80286
Np237	1135	0.101975
Pu238	0.000071	6.3E-09
Pu239	4106	0.368907
Pu240	1100	0.098831
Pu241	0.000191	1.7E-08
Pu242	201.4	0.018095
Am241	38.95	0.003499
Am242m	0.000123	1.1E-08
Am243	22.82	0.00205
Cm245	0.1141	0.00001
Total:	1113017	100.00%

4.1.3.16 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-5000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09347
Rh103	313.8	0.028194
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	12.71	0.001142
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	1.664	0.00015
U234	252.9	0.022722
U235	13130	1.179697
U236	3605	0.3239
U238	955000	85.80431
Np237	1172	0.105301
Pu238	1.6E-10	1.4E-14
Pu239	3771	0.338815
Pu240	800	0.071878
Pu241	0.000149	1.3E-08
Pu242	200.3	0.017996
Am241	0.3221	0.000029
Am242m	1.4E-10	1.3E-14
Am243	17.22	0.001547
Cm245	0.08936	8.0E-06
Total:	1112998	100.00%

4.1.3.17 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-10000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09365
Rh103	313.8	0.028195
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	12.71	0.001142
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	3.473	0.000312
U234	250	0.022462
U235	13630	1.224639
U236	3928	0.352926
U238	955000	85.80562
Np237	1170	0.105123
Pu238	2.0E-20	1.8E-24
Pu239	3272	0.293985
Pu240	470.8	0.042301
Pu241	0.000099	8.9E-09
Pu242	198.5	0.017835
Am241	0.003099	2.8E-07
Am242m	1.8E-20	1.6E-24
Am243	10.77	0.000968
Cm245	0.05945	5.3E-06
Total:	1112981	100.00%

4.1.3.18 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-20000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09402
Rh103	313.8	0.028195
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	12.71	0.001142
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	6.967	0.000626
U234	244.5	0.021969
U235	14430	1.296558
U236	4230	0.380072
U238	955000	85.80822
Np237	1167	0.104857
Pu238	3.1E-40	2.8E-44
Pu239	2459	0.220945
Pu240	163.1	0.014655
Pu241	0.000044	3.9E-09
Pu242	195	0.017521
Am241	0.001318	1.2E-07
Am242m	2.8E-40	2.5E-44
Am243	4.208	0.000378
Cm245	0.0263	2.4E-06
Total:	1112947	100.00%

4.1.3.19 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-50000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09347
Rh103	313.8	0.028194
Ag109	43.11	0.003873
Sm149	3.284	0.000295
Eu151	12.71	0.001142
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	16.5	0.001482
U234	228.8	0.020557
U235	15840	1.423184
U236	4380	0.393532
U238	955100	85.81333
Np237	1155	0.103774
Pu238	0	0
Pu239	1038	0.093262
Pu240	6.775	0.000609
Pu241	3.8E-06	3.4E-10
Pu242	184.8	0.016604
Am241	0.000114	1.0E-08
Am242m	0	0
Am243	0.2514	0.000023
Cm245	0.002277	2.0E-07
Total:	1112997	100.00%

4.1.3.20 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-100000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09416
Rh103	313.8	0.028196
Ag109	43.11	0.003874
Sm149	3.284	0.000295
Eu151	12.71	0.001142
Eu153	64.91	0.005832
Gd155	9.342	0.000839
U233	29.65	0.002664
U234	205.4	0.018456
U235	16620	1.49335
U236	4380	0.393554
U238	955100	85.81819
Np237	1137	0.102162
Pu238	0	0
Pu239	246	0.022104
Pu240	0.03376	3.0E-06
Pu241	6.4E-08	5.8E-12
Pu242	169	0.015185
Am241	1.9E-06	1.7E-10
Am242m	0	0
Am243	0.002295	2.1E-07
Cm245	0.000039	3.5E-09
Total:	1112934	100.00%

4.1.3.21 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-200000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09533
Rh103	313.8	0.028198
Ag109	43.11	0.003874
Sm149	3.284	0.000295
Eu151	12.71	0.001142
Eu153	64.91	0.005833
Gd155	9.342	0.000839
U233	47.98	0.004312
U234	167.4	0.015043
U235	16840	1.513264
U236	4368	0.392514
U238	955100	85.82649
Np237	1101	0.098937
Pu238	0	0
Pu239	13.8	0.00124
Pu240	1.2E-06	1.1E-10
Pu241	1.8E-11	1.7E-15
Pu242	141.2	0.012688
Am241	5.8E-10	5.3E-14
Am242m	0	0
Am243	2.2E-07	1.9E-11
Cm245	1.1E-08	9.9E-13
Total:	1112827	100.00%

4.1.3.22 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-500000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.09805
Rh103	313.8	0.028205
Ag109	43.11	0.003875
Sm149	3.284	0.000295
Eu151	12.71	0.001142
Eu153	64.91	0.005834
Gd155	9.342	0.00084
U233	68.15	0.006125
U234	101.1	0.009087
U235	16850	1.514503
U236	4329	0.389097
U238	955100	85.84579
Np237	998.5	0.089747
Pu238	0	0
Pu239	0.002439	2.2E-07
Pu240	3.6E-07	3.2E-11
Pu241	4.4E-22	3.9E-26
Pu242	82.53	0.007418
Am241	1.4E-20	1.2E-24
Am242m	0	0
Am243	2.3E-08	2.0E-12
Cm245	2.6E-19	2.4E-23
Total:	1112576	100.00%

4.1.3.23 Isotopic Composition (Weight %) of 3.00%-21 GWd/MTU-1000000 years

Isotope	g/MTIHM	Weight %
O 16	134600	12.10144
Rh103	313.8	0.028213
Ag109	43.11	0.003876
Sm149	3.284	0.000295
Eu151	12.71	0.001143
Eu153	64.91	0.005836
Gd155	9.342	0.00084
U233	65.64	0.005901
U234	63.46	0.005705
U235	16840	1.514028
U236	4265	0.383452
U238	955100	85.86987
Np237	849.5	0.076376
Pu238	0	0
Pu239	7.4E-08	6.6E-12
Pu240	3.6E-07	3.2E-11
Pu241	8.5E-40	7.7E-44
Pu242	33.69	0.003029
Am241	2.7E-38	2.4E-42
Am242m	0	0
Am243	2.2E-08	2.0E-12
Cm245	5.1E-37	4.6E-41
Total:	1112264	100.00%

4.1.2 SNF Density

The SNF density information listed in this section was not developed according to the QARD (Reference 5.3). The information comes from handbooks and textbooks that are recognized and utilized industry-wide. As such the information is to be taken as established fact that requires no additional qualification.

Density of Uranium Oxide -
Theoretical Density: 10.97 Mg/m^3 (0.3963 lb/in^3)
Reference 5.4, Page 224, Table 5.7
Percent of Theoretical Density: 95.90%
Reference 5.5, Page 6.3-2, Section 6.3.3

Density Used: 10.52 Mg/m^3 (0.3802 lb/in^3)

4.1.3 List of Isotope Atomic Weights

Reference 5.4, Appendix C, Page 941 - 978

	Element	Symbol	Isotope	MCNP ID	Atomic Weight
8	Oxygen	O	O-16	8016.50C	15.994915
42	Molybdenum	Mo	Mo-95	42095.50C	94.905839
43	Technetium	Tc	Tc-99*	43099.50C	98.90627501*
44	Ruthenium	Ru	Ru-101	44101.50C	100.905576
45	Rhodium	Rh	Rh-103	45103.50C	102.905511
47	Silver	Ag	Ag-109	47109.50C	108.904756
55	Cesium	Cs	Cs-133	55133.50C	132.905355
		Cs	Cs-135	55135.50C	134.90577
60	Neodymium	Nd	Nd-143	60143.50C	142.909779
		Nd	Nd-145	60145.50C	144.912538
62	Samarium	Sm	Sm-147	62147.50C	146.914867
		Sm	Sm-149	62149.50C	148.91718
		Sm	Sm-150	62150.50C	149.917276
		Sm	Sm-151	62151.50C	150.919919
		Sm	Sm-152	62152.50C	151.919756
63	Europium	Eu	Eu-151	63151.55C	150.919838
		Eu	Eu-153	63153.55C	152.921242
		Eu	Eu-154	63154.50C	153.923053
64	Gadolinium	Gd	Gd-155	64155.50C	154.922664
		Gd	Gd-157	64157.50C	156.924025

4.1.3 List of Isotope Atomic Weights (Continued)

	Element	Symbol	Isotope	MCNP ID	Atomic Weight
92	Uranium	U	U-233	92233.50C	233.039522
		U	U-234	92234.50C	234.040904
		U	U-235	92235.50C	235.043915
		U	U-236	92236.50C	236.045637
		U	U-238	92238.50C	238.05077
93	Neptunium	Np	Np-237	93237.55C	237.048056
94	Plutonium	Pu	Pu-238	94238.50C	238.049511
		Pu	Pu-239	94239.55C	239.052146
		Pu	Pu-240	94240.50C	240.053882
		Pu	Pu-241	94241.50C	241.056737
		Pu	Pu-242	94242.50C	242.058725
95	Americium	Am	Am-241	95241.50C	241.056714
		Am	Am-242m	95242.50C	242.059502
		Am	Am-243	95243.50C	243.061367
96	Curium	Cm	Cm-243	96243.35C	243.06137
		Cm	Cm-245	96245.35C	245.065371
		Cm	Cm-248	96248.35C	248.0722

* See assumption 4.3.2 for the source of the Atomic Weight for Tc-99

The atomic weight data listed above comes from handbooks and textbooks (References 5.4) that are utilized industry-wide. The data is taken to be established fact that requires no additional qualification.

4.1.4 Physical Constants

Avogadro's Number [N_A] = 0.602252 $(g\text{-}mol)^{-1} \times 10^{24}$, Reference 5.6. A physical constant is taken to be established fact that requires no additional qualification.

4.2 Criteria -

Not applicable.

4.3 Assumptions -

4.3.1 It is assumed that isotopic weight percentages can be generated from a listing of grams of an isotope per metric ton of initial heavy metal by ratioing the grams of a particular isotope to the sum of the grams of all the isotopes considered. The basis for this assumption is engineering judgement. This assumption is used is section 4.1.

4.3.2 The atomic weight for technetium (Tc) 99 was assumed as 98.90627501. The atomic weight of TC-99 was not available in the normal reference. The basis of this assumption is the MCNP cross section library's neutron based atomic weight translated

to the standard Carbon-12 based atomic weight. This assumption is used in section 4.1.3.

4.4 Codes and Standards -

Not applicable.

5. References -

5.1 Yucca Mountain Site Characterization Project Q-List, YMP/90-55Q, REV 3, December 1994

5.2 *Perform Criticality, Thermal, Structural, and Shielding Scoping Analyses SCPB: N/A*, DI: B00000000-01717-2200-00026 REV 01, August 30, 1995

5.3 Quality Assurance Requirements and Description (QARD), DOE/RW-0333P Rev 5, October 31, 1995

5.4 Benedict, Manson; Pigford, Thomas H.; and Levi, Hans W. Nuclear Chemical Engineering, 2nd Edition, McGraw-Hill Book Company, New York NY, 1981

5.5 NAC-STC SAR, Revision 1, Nuclear Assurance Corporation, July 1992

5.6 Lamarsh, John R. Introduction to Nuclear Engineering, 2nd Edition, Addison-Wesley Publishing Company, Reading Massachusetts, 1983

6. Use of Computer Software -

A. Scientific and Engineering Software

Not applicable.

B. Computational Support Software:

6.1 Lotus 1-2-3 for Windows, Release 1.1, loaded on a 66MHz 486 PC, ID: 106608, Serial # 2313150

6.2 LWR Radiological Characteristics Data Base, QTYDB, CSCI: A00000000-02268-1200-20002 VER. 1.1, loaded on a 66MHz 486 PC, ID: 102609, Serial # 101217

7. Design Analysis -

The procedure followed for performing the design analysis consisted of the following:

A. Identify the desired SNF characteristics
B. Retrieve the isotopic composition information from the CDB
C. Locate density information for SNF
D. Locate the nuclear data (atomic weights) for the isotopes in the SNF
E. Enter the number density equation into a Lotus 1-2-3 spreadsheet
F. Import the isotopic and nuclear data (atomic weights) into the spreadsheet
G. Calculate the material number densities.

7.1 List of SNF Characteristics

1 PWR 3.00 wt% U-235 initial enrichment, 20 GWd/MTU burnup, and ages 1 to 1,000,000 years
2 PWR 3.75 wt% U-235 initial enrichment, 37 GWd/MTU burnup, and ages 1 to 1,000,000 years
3 BWR 3.00 wt% U-235 initial enrichment, 21 GWd/MTU burnup, and ages 1 to 1,000,000 years

7.2 SNF Isotopic Composition Information

The SNF isotopic composition information needed for calculating number densities is listed in section 4.1.1.

7.3 SNF Density Information

The SNF density information needed for calculating number densities is listed in section 4.1.2.

7.4 Nuclear Data (Atomic Weights)

The isotopic nuclear data (atomic weights) required for calculating number densities is listed in section 4.1.3.

7.5 Number Density Equation

The equation used to calculate the SNF number densities is shown below. The number density equation was entered into a Lotus spreadsheet (Attachment I).

Reference 5.6, Page 35, Equation 2.55

$$N_i = \frac{\omega_i \rho N_A}{M_i}$$

where:

N_i = the number (atom) density of the ith isotope/element
ω_i = the weight percent of the ith isotope/element
ρ = the density of the material
N_A = Avogadro's number, a constant = 0.602252 $(g\text{-}mol)^{-1} \times 10^{24}$
M_i = the atomic weight of the ith isotope

7.6 Number Density Calculations

The results of the SNF number density calculations are located in a Lotus 1-2-3 spreadsheet. The results of the Lotus spreadsheet are shown in Attachment I. The number densities are reported in the standard units [atoms/barn-cm].

8. Conclusions -

The general purpose of this design analysis was to calculate the SNF number densities to be used in the MPC criticality design analyses. This was accomplished so no additional conclusions, decisions, or recommendations are needed.

9. Attachments -

Attachment:	Case:	Pages:
I	SNF Number Density Worksheet {snfnd00.wk3 12-01-95}	36
II	CDB Output - PWR 3.00%-20 GWd/MTU {12-01-95}	147
III	CDB Output - PWR 3.75%-37 GWd/MTU {12-01-95}	147
IV	CDB Output - BWR 3.00%-21 GWd/MTU {12-01-95}	147

SNF Number Density Worksheet:

Number Density = (Weight %) * (Density) * (Na) / (Aw)
Avogadro's Number [Na] = 0.602252
Atomic Weight [Aw]

BURNUP: 20000
ENRICHMEN 0.03
DECAY TIM 1

PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
DECAY TIME: 1 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	1 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.99492	4.7767E-02
RH103	103	308	0.0002	Rh103	0.028%	102.9055	1.7027E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0436E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	0.09884	0	Eu151	0.000%	150.9198	3.7258E-09
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	0.7426	0	Gd155	0.000%	154.9227	2.7269E-08
U233	233	0.001026	0	U233	0.000%	233.0395	2.5047E-11
U234	234	200.4	0.0001	U234	0.018%	234.0409	4.8712E-06
U235	235	13020	0.009	U235	1.169%	235.0439	3.1513E-04
U236	236	2926	0.002	U236	0.263%	236.0456	7.0520E-05
U238	238	955900	0.6638	U238	85.820%	238.0508	2.2844E-02
NP237	237	226.9	0.0002	Np237	0.020%	237.0481	5.4454E-06
PU238	238	42.28	0	Pu238	0.004%	238.0495	1.0104E-06
PU239	239	4535	0.0031	Pu239	0.407%	239.0521	1.0792E-04
PU240	240	1307	0.0009	Pu240	0.117%	240.0539	3.0974E-05
PU241	241	748.6	0.0005	Pu241	0.067%	241.0567	1.7667E-05
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	53.79	0	Am241	0.005%	241.0567	1.2695E-06
AM242M	242	0.5954	0	Am242m	0.000%	242.0595	1.3993E-08
AM243	243	17.85	0	Am243	0.002%	243.0614	4.1779E-07
CM245	245	0.06129	0	Cm245	0.000%	245.0654	1.4228E-09
TOTAL	1440000	1.0001		1113847	100.00%		7.1192E-02

BURNUP: 20000
ENRICHMEN 0.03
DECAY TIM 2

PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
DECAY TIME: 2 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	2 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7767E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0436E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	0.1876	0	Eu151	0.000%	150.9198	7.0716E-09
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	1.356	0	Gd155	0.000%	154.9227	4.9794E-08
U233	233	0.001106	0	U233	0.000%	233.0395	2.7000E-11
U234	234	200.8	0.0001	U234	0.018%	234.0409	4.8810E-06
U235	235	13020	0.009	U235	1.169%	235.0439	3.1513E-04
U236	236	2926	0.002	U236	0.263%	236.0456	7.0520E-05
U238	238	955900	0.6638	U238	85.820%	238.0508	2.2844E-02
NP237	237	227	0.0002	Np237	0.020%	237.0481	5.4478E-06
PU238	238	42.54	0	Pu238	0.004%	238.0495	1.0166E-06
PU239	239	4535	0.0031	Pu239	0.407%	239.0521	1.0792E-04
PU240	240	1307	0.0009	Pu240	0.117%	240.0539	3.0974E-05
PU241	241	713.4	0.0005	Pu241	0.064%	241.0567	1.6836E-05
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	88.85	0.0001	Am241	0.008%	241.0567	2.0969E-06
AM242M	242	0.5927	0	Am242m	0.000%	242.0595	1.3930E-08
AM243	243	17.85	0	Am243	0.002%	243.0614	4.1779E-07
CM245	245	0.06128	0	Cm245	0.000%	245.0654	1.4226E-09
TOTAL	1440000	1		1113849	100.00%		7.1192E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 3 YEARS
DECAY TIM 3 Density 10.52

ISOTOPE		GRAMS/MTIHM	%TOTAL	Element	%	Aw	3 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7767E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0436E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	0.2758	0	Eu151	0.000%	150.9198	1.0396E-08
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	1.89	0	Gd155	0.000%	154.9227	6.9403E-08
U233	233	0.001186	0	U233	0.000%	233.0395	2.8953E-11
U234	234	201.1	0.0001	U234	0.018%	234.0409	4.8883E-06
U235	235	13020	0.009	U235	1.169%	235.0439	3.1513E-04
U236	236	2926	0.002	U236	0.263%	236.0456	7.0520E-05
U238	238	955900	0.6638	U238	85.820%	238.0508	2.2844E-02
NP237	237	227.1	0.0002	Np237	0.020%	237.0481	5.4502E-06
PU238	238	42.33	0	Pu238	0.004%	238.0495	1.0116E-06
PU239	239	4534	0.0031	Pu239	0.407%	239.0521	1.0790E-04
PU240	240	1307	0.0009	Pu240	0.117%	240.0539	3.0974E-05
PU241	241	679.9	0.0005	Pu241	0.061%	241.0567	1.6046E-05
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	122.3	0.0001	Am241	0.011%	241.0567	2.8863E-06
AM242M	242	0.59	0	Am242m	0.000%	242.0595	1.3866E-08
AM243	243	17.85	0	Am243	0.002%	243.0614	4.1779E-07
CM245	245	0.06127	0	Cm245	0.000%	245.0654	1.4223E-09
TOTAL	1440000	1		1113848	100.00%		7.1192E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 5 YEARS
DECAY TIM 5 Density 10.52

ISOTOPE		GRAMS/MTIHM	%TOTAL	Element	%	Aw	5 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7767E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0436E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	0.45	0	Eu151	0.000%	150.9198	1.6963E-08
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	2.758	0	Gd155	0.000%	154.9227	1.0128E-07
U233	233	0.00134	0	U233	0.000%	233.0395	3.2712E-11
U234	234	201.8	0.0001	U234	0.018%	234.0409	4.9053E-06
U235	235	13020	0.009	U235	1.169%	235.0439	3.1513E-04
U236	236	2926	0.002	U236	0.263%	236.0456	7.0520E-05
U238	238	955900	0.6638	U238	85.819%	238.0508	2.2844E-02
NP237	237	227.7	0.0002	Np237	0.020%	237.0481	5.4646E-06
PU238	238	41.71	0	Pu238	0.004%	238.0495	9.9680E-07
PU239	239	4534	0.0031	Pu239	0.407%	239.0521	1.0790E-04
PU240	240	1307	0.0009	Pu240	0.117%	240.0539	3.0974E-05
PU241	241	617.4	0.0004	Pu241	0.055%	241.0567	1.4571E-05
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	184.2	0.0001	Am241	0.017%	241.0567	4.3471E-06
AM242M	242	0.5846	0	Am242m	0.000%	242.0595	1.3739E-08
AM243	243	17.84	0	Am243	0.002%	243.0614	4.1755E-07
CM245	245	0.06126	0	Cm245	0.000%	245.0654	1.4221E-09
TOTAL	1440000	1		1113850	100.00%		7.1192E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 10 YEARS
DECAY TIM 10 Density 10.52 10

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7767E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	0.874	0	Eu151	0.000%	150.9198	3.2946E-08
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	4.11	0	Gd155	0.000%	154.9227	1.5092E-07
U233	233	0.001704	0	U233	0.000%	233.0395	4.1598E-11
U234	234	203.4	0.0001	U234	0.018%	234.0409	4.9441E-06
U235	235	13020	0.009	U235	1.169%	235.0439	3.1513E-04
U236	236	2927	0.002	U236	0.263%	236.0456	7.0544E-05
U238	238	955900	0.6638	U238	85.819%	238.0508	2.2844E-02
NP237	237	229.7	0.0002	Np237	0.021%	237.0481	5.5126E-06
PU238	238	40.1	0	Pu238	0.004%	238.0495	9.5832E-07
PU239	239	4534	0.0031	Pu239	0.407%	239.0521	1.0790E-04
PU240	240	1307	0.0009	Pu240	0.117%	240.0539	3.0974E-05
PU241	241	485.4	0.0003	Pu241	0.044%	241.0567	1.1455E-05
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	314.2	0.0002	Am241	0.028%	241.0567	7.4151E-06
AM242M	242	0.5715	0	Am242m	0.000%	242.0595	1.3432E-08
AM243	243	17.83	0	Am243	0.002%	243.0614	4.1732E-07
CM245	245	0.06124	0	Cm245	0.000%	245.0654	1.4216E-09
TOTAL	1440000	1.0001		1113852	100.00%		7.1192E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 15 YEARS
DECAY TIM 15 Density 10.52 15

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7766E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	1.282	0	Eu151	0.000%	150.9198	4.8325E-08
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	4.783	0	Gd155	0.000%	154.9227	1.7564E-07
U233	233	0.002072	0	U233	0.000%	233.0395	5.0581E-11
U234	234	204.9	0.0001	U234	0.018%	234.0409	4.9806E-06
U235	235	13030	0.009	U235	1.170%	235.0439	3.1537E-04
U236	236	2927	0.002	U236	0.263%	236.0456	7.0543E-05
U238	238	955900	0.6638	U238	85.819%	238.0508	2.2844E-02
NP237	237	232.6	0.0002	Np237	0.021%	237.0481	5.5822E-06
PU238	238	38.56	0	Pu238	0.003%	238.0495	9.2151E-07
PU239	239	4533	0.0031	Pu239	0.407%	239.0521	1.0788E-04
PU240	240	1307	0.0009	Pu240	0.117%	240.0539	3.0974E-05
PU241	241	381.5	0.0003	Pu241	0.034%	241.0567	9.0033E-06
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	415.1	0.0003	Am241	0.037%	241.0567	9.7963E-06
AM242M	242	0.5586	0	Am242m	0.000%	242.0595	1.3128E-08
AM243	243	17.82	0	Am243	0.002%	243.0614	4.1708E-07
CM245	245	0.06121	0	Cm245	0.000%	245.0654	1.4209E-09
TOTAL	1440000	1.0001		1113862	100.00%		7.1191E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 20 YEARS
DECAY TIM 20 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	20 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7766E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	1.675	0	Eu151	0.000%	150.9198	6.3139E-08
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.117	0	Gd155	0.000%	154.9227	1.8790E-07
U233	233	0.002445	0	U233	0.000%	233.0395	5.9687E-11
U234	234	206.4	0.0001	U234	0.019%	234.0409	5.0170E-06
U235	235	13030	0.009	U235	1.170%	235.0439	3.1537E-04
U236	236	2928	0.002	U236	0.263%	236.0456	7.0567E-05
U238	238	955900	0.6638	U238	85.819%	238.0508	2.2844E-02
NP237	237	236.2	0.0002	Np237	0.021%	237.0481	5.6686E-06
PU238	238	37.08	0	Pu238	0.003%	238.0495	8.8614E-07
PU239	239	4532	0.0031	Pu239	0.407%	239.0521	1.0785E-04
PU240	240	1306	0.0009	Pu240	0.117%	240.0539	3.0950E-05
PU241	241	299.9	0.0002	Pu241	0.027%	241.0567	7.0776E-06
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	493	0.0003	Am241	0.044%	241.0567	1.1635E-05
AM242M	242	0.546	0	Am242m	0.000%	242.0595	1.2832E-08
AM243	243	17.81	0	Am243	0.002%	243.0614	4.1685E-07
CM245	245	0.06119	0	Cm245	0.000%	245.0654	1.4205E-09
TOTAL	1440000	1		1113862	100.00%		7.1191E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 30 YEARS
DECAY TIM 30 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	30 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7766E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	2.416	0	Eu151	0.000%	150.9198	9.1071E-08
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.366	0	Gd155	0.000%	154.9227	1.9704E-07
U233	233	0.00321	0	U233	0.000%	233.0395	7.8362E-11
U234	234	209.3	0.0001	U234	0.019%	234.0409	5.0875E-06
U235	235	13030	0.009	U235	1.170%	235.0439	3.1537E-04
U236	236	2929	0.002	U236	0.263%	236.0456	7.0591E-05
U238	238	955900	0.6638	U238	85.818%	238.0508	2.2844E-02
NP237	237	244.9	0.0002	Np237	0.022%	237.0481	5.8773E-06
PU238	238	34.28	0	Pu238	0.003%	238.0495	8.1922E-07
PU239	239	4531	0.0031	Pu239	0.407%	239.0521	1.0783E-04
PU240	240	1306	0.0009	Pu240	0.117%	240.0539	3.0950E-05
PU241	241	185.3	0.0001	Pu241	0.017%	241.0567	4.3731E-06
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	598.8	0.0004	Am241	0.054%	241.0567	1.4132E-05
AM242M	242	0.5216	0	Am242m	0.000%	242.0595	1.2259E-08
AM243	243	17.8	0	Am243	0.002%	243.0614	4.1661E-07
CM245	245	0.06114	0	Cm245	0.000%	245.0654	1.4193E-09
TOTAL	1440000	1.0001		1113863	100.00%		7.1191E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 50 YEARS
DECAY TIM 50 Density 10.52

ISOTOPE		GRAMS/MTIHM	%TOTAL	Element	%	Aw	50 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7766E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	3.737	0	Eu151	0.000%	150.9198	1.4087E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.442	0	Gd155	0.000%	154.9227	1.9984E-07
U233	233	0.004834	0	U233	0.000%	233.0395	1.1801E-10
U234	234	214.3	0.0001	U234	0.019%	234.0409	5.2091E-06
U235	235	13030	0.009	U235	1.170%	235.0439	3.1537E-04
U236	236	2932	0.002	U236	0.263%	236.0456	7.0664E-05
U238	238	955900	0.6638	U238	85.819%	238.0508	2.2844E-02
NP237	237	265.6	0.0002	Np237	0.024%	237.0481	6.3741E-06
PU238	238	29.3	0	Pu238	0.003%	238.0495	7.0021E-07
PU239	239	4528	0.0031	Pu239	0.407%	239.0521	1.0776E-04
PU240	240	1303	0.0009	Pu240	0.117%	240.0539	3.0879E-05
PU241	241	70.76	0	Pu241	0.006%	241.0567	1.6699E-06
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	692.3	0.0005	Am241	0.062%	241.0567	1.6338E-05
AM242M	242	0.4762	0	Am242m	0.000%	242.0595	1.1192E-08
AM243	243	17.77	0	Am243	0.002%	243.0614	4.1591E-07
CM245	245	0.06103	0	Cm245	0.000%	245.0654	1.4167E-09
TOTAL	1440000	1.0001		1113861	100.00%		7.1191E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 100 YEARS
DECAY TIM 100 Density 10.52

ISOTOPE		GRAMS/MTIHM	%TOTAL	Element	%	Aw	100 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7766E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	6.274	0	Eu151	0.001%	150.9198	2.3650E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0005E-07
U233	233	0.009507	0	U233	0.000%	233.0395	2.3208E-10
U234	234	223.9	0.0002	U234	0.020%	234.0409	5.4424E-06
U235	235	13040	0.0091	U235	1.171%	235.0439	3.1561E-04
U236	236	2939	0.002	U236	0.264%	236.0456	7.0832E-05
U238	238	955900	0.6638	U238	85.818%	238.0508	2.2844E-02
NP237	237	321.5	0.0002	Np237	0.029%	237.0481	7.7156E-06
PU238	238	19.81	0	Pu238	0.002%	238.0495	4.7342E-07
PU239	239	4522	0.0031	Pu239	0.406%	239.0521	1.0761E-04
PU240	240	1296	0.0009	Pu240	0.116%	240.0539	3.0713E-05
PU241	241	6.376	0	Pu241	0.001%	241.0567	1.5047E-07
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	699.9	0.0005	Am241	0.063%	241.0567	1.6517E-05
AM242M	242	0.3791	0	Am242m	0.000%	242.0595	8.9096E-09
AM243	243	17.68	0	Am243	0.002%	243.0614	4.1380E-07
CM245	245	0.06079	0	Cm245	0.000%	245.0654	1.4112E-09
TOTAL	1440000	1		1113866	100.00%		7.1191E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 200 YEARS
DECAY TIM 200 Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	200 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7766E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	9.174	0	Eu151	0.001%	150.9198	3.4581E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0006E-07
U233	233	0.02141	0	U233	0.000%	233.0395	5.2265E-10
U234	234	234.7	0.0002	U234	0.021%	234.0409	5.7049E-06
U235	235	13050	0.0091	U235	1.172%	235.0439	3.1586E-04
U236	236	2952	0.0021	U236	0.265%	236.0456	7.1146E-05
U238	238	955900	0.6638	U238	85.818%	238.0508	2.2844E-02
NP237	237	424.3	0.0003	Np237	0.038%	237.0481	1.0183E-05
PU238	238	9.065	0	Pu238	0.001%	238.0495	2.1663E-07
PU239	239	4509	0.0031	Pu239	0.405%	239.0521	1.0730E-04
PU240	240	1283	0.0009	Pu240	0.115%	240.0539	3.0405E-05
PU241	241	0.05186	0	Pu241	0.000%	241.0567	1.2239E-09
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	601.8	0.0004	Am241	0.054%	241.0567	1.4202E-05
AM242M	242	0.2403	0	Am242m	0.000%	242.0595	5.6475E-09
AM243	243	17.52	0	Am243	0.002%	243.0614	4.1006E-07
CM245	245	0.0603	0	Cm245	0.000%	245.0654	1.3998E-09
TOTAL	1440000	1.0001		1113864	100.00%		7.1191E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 300 YEARS
DECAY TIM 300 Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	300 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7766E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7032E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	10.51	0	Eu151	0.001%	150.9198	3.9617E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0005E-07
U233	233	0.03635	0	U233	0.000%	233.0395	8.8736E-10
U234	234	239.7	0.0002	U234	0.022%	234.0409	5.8264E-06
U235	235	13070	0.0091	U235	1.173%	235.0439	3.1634E-04
U236	236	2966	0.0021	U236	0.266%	236.0456	7.1483E-05
U238	238	955900	0.6638	U238	85.818%	238.0508	2.2844E-02
NP237	237	512.1	0.0004	Np237	0.046%	237.0481	1.2290E-05
PU238	238	4.162	0	Pu238	0.000%	238.0495	9.9463E-08
PU239	239	4496	0.0031	Pu239	0.404%	239.0521	1.0699E-04
PU240	240	1269	0.0009	Pu240	0.114%	240.0539	3.0073E-05
PU241	241	0.000523	0	Pu241	0.000%	241.0567	1.2352E-11
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	512.7	0.0004	Am241	0.046%	241.0567	1.2100E-05
AM242M	242	0.1523	0	Am242m	0.000%	242.0595	3.5793E-09
AM243	243	17.35	0	Am243	0.002%	243.0614	4.0608E-07
CM245	245	0.05981	0	Cm245	0.000%	245.0654	1.3884E-09
TOTAL	1440000	1.0001		1113871	100.00%		7.1191E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 500 YEARS
DECAY TIM 500 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	500 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7766E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	11.43	0	Eu151	0.001%	150.9198	4.3085E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0006E-07
U233	233	0.07356	0	U233	0.000%	233.0395	1.7957E-09
U234	234	242.9	0.0002	U234	0.022%	234.0409	5.9042E-06
U235	235	13090	0.0091	U235	1.175%	235.0439	3.1682E-04
U236	236	2992	0.0021	U236	0.269%	236.0456	7.2110E-05
U238	238	955900	0.6638	U238	85.818%	238.0508	2.2844E-02
NP237	237	650.5	0.0005	Np237	0.058%	237.0481	1.5611E-05
PU238	238	0.8906	0	Pu238	0.000%	238.0495	2.1284E-08
PU239	239	4470	0.0031	Pu239	0.401%	239.0521	1.0638E-04
PU240	240	1242	0.0009	Pu240	0.112%	240.0539	2.9433E-05
PU241	241	0.000098	0	Pu241	0.000%	241.0567	2.3189E-12
PU242	242	158.3	0.0001	Pu242	0.014%	242.0587	3.7204E-06
AM241	241	372	0.0003	Am241	0.033%	241.0567	8.7791E-06
AM242M	242	0.06118	0	Am242m	0.000%	242.0595	1.4379E-09
AM243	243	17.03	0	Am243	0.002%	243.0614	3.9859E-07
CM245	245	0.05884	0	Cm245	0.000%	245.0654	1.3659E-09
TOTAL	1440000	1.0001		1113862	100.00%		7.1192E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 1000 YEARS
DECAY TIM 1000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	1000 Number Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7767E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	11.67	0	Eu151	0.001%	150.9198	4.3990E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0006E-07
U233	233	0.195	0	U233	0.000%	233.0395	4.7603E-09
U234	234	243.5	0.0002	U234	0.022%	234.0409	5.9189E-06
U235	235	13150	0.0091	U235	1.181%	235.0439	3.1828E-04
U236	236	3055	0.0021	U236	0.274%	236.0456	7.3629E-05
U238	238	955900	0.6638	U238	85.819%	238.0508	2.2844E-02
NP237	237	852.2	0.0006	Np237	0.077%	237.0481	2.0452E-05
PU238	238	0.0228	0	Pu238	0.000%	238.0495	5.4488E-10
PU239	239	4408	0.0031	Pu239	0.396%	239.0521	1.0490E-04
PU240	240	1179	0.0008	Pu240	0.106%	240.0539	2.7941E-05
PU241	241	0.000094	0	Pu241	0.000%	241.0567	2.2255E-12
PU242	242	158.1	0.0001	Pu242	0.014%	242.0587	3.7157E-06
AM241	241	166.8	0.0001	Am241	0.015%	241.0567	3.9365E-06
AM242M	242	0.006258	0	Am242m	0.000%	242.0595	1.4708E-10
AM243	243	16.24	0	Am243	0.001%	243.0614	3.8010E-07
CM245	245	0.05649	0	Cm245	0.000%	245.0654	1.3114E-09
TOTAL	1440000	1.0001		1113856	100.00%		7.1192E-02

BURNUP:	20000			PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU			
ENRICHMEN	0.03			DECAY TIME:	2000 YEARS		
DECAY TIM	2000			Density	10.52		2000
							Number
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7767E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0435E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	11.68	0	Eu151	0.001%	150.9198	4.4028E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0006E-07
U233	233	0.4911	0	U233	0.000%	233.0395	1.1989E-08
U234	234	243	0.0002	U234	0.022%	234.0409	5.9067E-06
U235	235	13280	0.0092	U235	1.192%	235.0439	3.2143E-04
U236	236	3173	0.0022	U236	0.285%	236.0456	7.6472E-05
U238	238	955900	0.6638	U238	85.819%	238.0508	2.2844E-02
NP237	237	982.9	0.0007	Np237	0.088%	237.0481	2.3589E-05
PU238	238	0.000039	0	Pu238	0.000%	238.0495	9.3752E-13
PU239	239	4284	0.003	Pu239	0.385%	239.0521	1.0195E-04
PU240	240	1060	0.0007	Pu240	0.095%	240.0539	2.5120E-05
PU241	241	0.000087	0	Pu241	0.000%	241.0567	2.0511E-12
PU242	242	157.9	0.0001	Pu242	0.014%	242.0587	3.7110E-06
AM241	241	33.56	0	Am241	0.003%	241.0567	7.9202E-07
AM242M	242	0.000065	0	Am242m	0.000%	242.0595	1.5387E-12
AM243	243	14.8	0	Am243	0.001%	243.0614	3.4640E-07
CM245	245	0.05206	0	Cm245	0.000%	245.0654	1.2085E-09
TOTAL	1440000	1.0001		1113857	100.00%		7.1192E-02

BURNUP:	20000			PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU			
ENRICHMEN	0.03			DECAY TIME:	5000 YEARS		
DECAY TIM	5000			Density	10.52		5000
							Number
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Density
O 16	16	134300	0.0933	O 16	12.057%	15.9949	4.7767E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0436E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151	11.68	0	Eu151	0.001%	150.9198	4.4028E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0006E-07
U233	233	1.442	0	U233	0.000%	233.0395	3.5202E-08
U234	234	241.3	0.0002	U234	0.022%	234.0409	5.8654E-06
U235	235	13630	0.0095	U235	1.224%	235.0439	3.2990E-04
U236	236	3457	0.0024	U236	0.310%	236.0456	8.3318E-05
U238	238	955900	0.6638	U238	85.820%	238.0508	2.2844E-02
NP237	237	1015	0.0007	Np237	0.091%	237.0481	2.4359E-05
PU238	238	8.4E-11	0	Pu238	0.000%	238.0495	1.9979E-18
PU239	239	3933	0.0027	Pu239	0.353%	239.0521	9.3598E-05
PU240	240	771	0.0005	Pu240	0.069%	240.0539	1.8272E-05
PU241	241	0.000068	0	Pu241	0.000%	241.0567	1.6060E-12
PU242	242	157	0.0001	Pu242	0.014%	242.0587	3.6899E-06
AM241	241	0.2754	0	Am241	0.000%	241.0567	6.4995E-09
AM242M	242	7.5E-11	0	Am242m	0.000%	242.0595	1.7625E-18
AM243	243	11.16	0	Am243	0.001%	243.0614	2.6121E-07
CM245	245	0.04076	0	Cm245	0.000%	245.0654	9.4621E-10
TOTAL	1440000	1.0001		1113844	100.00%		7.1193E-02

BURNUP: 20000
ENRICHMEN 0.03
DECAY TIM 10000

PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
DECAY TIME: 10000 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	10000 Number Density
O 16	16 134300	0.0933	O 16	12.057%	15.9949	4.7767E-02
RH103	103 308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109 39.12	0	Ag109	0.004%	108.9048	2.0436E-06
SM149	149 3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151 11.68	0	Eu151	0.001%	150.9198	4.4029E-07
EU153	153 59.07	0	Eu153	0.005%	152.9212	2.1975E-06
GD155	155 5.448	0	Gd155	0.000%	154.9227	2.0006E-07
U233	233 3.008	0	U233	0.000%	233.0395	7.3432E-08
U234	234 238.7	0.0002	U234	0.021%	234.0409	5.8023E-06
U235	235 14160	0.0098	U235	1.271%	235.0439	3.4273E-04
U236	236 3770	0.0026	U236	0.338%	236.0456	9.0862E-05
U238	238 955900	0.6638	U238	85.820%	238.0508	2.2844E-02
NP237	237 1013	0.0007	Np237	0.091%	237.0481	2.4311E-05
PU238	238 1.0E-20	0	Pu238	0.000%	238.0495	2.5046E-28
PU239	239 3409	0.0024	Pu239	0.306%	239.0521	8.1128E-05
PU240	240 453.8	0.0003	Pu240	0.041%	240.0539	1.0755E-05
PU241	241 0.000045	0	Pu241	0.000%	241.0567	1.0682E-12
PU242	242 155.6	0.0001	Pu242	0.014%	242.0587	3.6570E-06
AM241	241 0.001452	0	Am241	0.000%	241.0567	3.4268E-11
AM242M	242 9.4E-21	0	Am242m	0.000%	242.0595	2.2095E-28
AM243	243 6.977	0	Am243	0.001%	243.0614	1.6330E-07
CM245	245 0.02711	0	Cm245	0.000%	245.0654	6.2934E-10
TOTAL	1440000	1.0001	1113837	100.00%		7.1194E-02

BURNUP: 20000
ENRICHMEN 0.03
DECAY TIM 20000

PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
DECAY TIME: 20000 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	20000 Number Density
O 16	16 134300	0.0933	O 16	12.058%	15.9949	4.7768E-02
RH103	103 308.1	0.0002	Rh103	0.028%	102.9055	1.7033E-05
AG109	109 39.12	0	Ag109	0.004%	108.9048	2.0436E-06
SM149	149 3.471	0	Sm149	0.000%	148.9172	1.3260E-07
EU151	151 11.68	0	Eu151	0.001%	150.9198	4.4029E-07
EU153	153 59.07	0	Eu153	0.005%	152.9212	2.1976E-06
GD155	155 5.448	0	Gd155	0.000%	154.9227	2.0006E-07
U233	233 6.032	0	U233	0.001%	233.0395	1.4726E-07
U234	234 233.5	0.0002	U234	0.021%	234.0409	5.6760E-06
U235	235 15010	0.0104	U235	1.348%	235.0439	3.6331E-04
U236	236 4062	0.0028	U236	0.365%	236.0456	9.7901E-05
U238	238 955900	0.6638	U238	85.822%	238.0508	2.2845E-02
NP237	237 1010	0.0007	Np237	0.091%	237.0481	2.4240E-05
PU238	238 1.6E-40	0	Pu238	0.000%	238.0495	3.9385E-48
PU239	239 2560	0.0018	Pu239	0.230%	239.0521	6.0924E-05
PU240	240 157.2	0.0001	Pu240	0.014%	240.0539	3.7255E-06
PU241	241 0.00002	0	Pu241	0.000%	241.0567	4.7272E-13
PU242	242 152.9	0.0001	Pu242	0.014%	242.0587	3.5936E-06
AM241	241 0.000601	0	Am241	0.000%	241.0567	1.4186E-11
AM242M	242 1.5E-40	0	Am242m	0.000%	242.0595	3.4737E-48
AM243	243 2.727	0	Am243	0.000%	243.0614	6.3828E-08
CM245	245 0.012	0	Cm245	0.000%	245.0654	2.7858E-10
TOTAL	1440000	1.0001	1113821	100.00%		7.1195E-02

BURNUP: 20000
ENRICHMEN 0.03
DECAY TIM 50000

PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
DECAY TIME: 50000 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	50000 Number Density
O 16	16 134300	0.0933	O 16	12.058%	15.9949	4.7770E-02
RH103	103 308.1	0.0002	Rh103	0.028%	102.9055	1.7034E-05
AG109	109 39.12	0	Ag109	0.004%	108.9048	2.0437E-06
SM149	149 3.471	0	Sm149	0.000%	148.9172	1.3261E-07
EU151	151 11.68	0	Eu151	0.001%	150.9198	4.4031E-07
EU153	153 59.07	0	Eu153	0.005%	152.9212	2.1977E-06
GD155	155 5.448	0	Gd155	0.000%	154.9227	2.0007E-07
U233	233 14.29	0	U233	0.001%	233.0395	3.4887E-07
U234	234 218.7	0.0002	U234	0.020%	234.0409	5.3164E-06
U235	235 16480	0.0114	U235	1.480%	235.0439	3.9891E-04
U236	236 4206	0.0029	U236	0.378%	236.0456	1.0138E-04
U238	238 955900	0.6638	U238	85.825%	238.0508	2.2846E-02
NP237	237 1000	0.0007	Np237	0.090%	237.0481	2.4001E-05
			Pu238	0.000%	238.0495	0.0000E+00
PU239	239 1080	0.0008	Pu239	0.097%	239.0521	2.5704E-05
PU240	240 6.53	0	Pu240	0.001%	240.0539	1.5476E-07
PU241	241 1.7E-06	0	Pu241	0.000%	241.0567	4.0902E-14
PU242	242 144.8	0.0001	Pu242	0.013%	242.0587	3.4034E-06
AM241	241 0.000052	0	Am241	0.000%	241.0567	1.2280E-12
			Am242m	0.000%	242.0595	0.0000E+00
AM243	243 0.163	0	Am243	0.000%	243.0614	3.8153E-09
CM245	245 0.001038	0	Cm245	0.000%	245.0654	2.4098E-11
TOTAL	1440000 1.0001		1113777	100.00%		7.1197E-02

BURNUP: 20000
ENRICHMEN 0.03
DECAY TIM 100000

PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
DECAY TIME: 100000 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	100000 Number Density
O 16	16 134300	0.0933	O 16	12.059%	15.9949	4.7772E-02
RH103	103 308.1	0.0002	Rh103	0.028%	102.9055	1.7035E-05
AG109	109 39.12	0	Ag109	0.004%	108.9048	2.0438E-06
SM149	149 3.471	0	Sm149	0.000%	148.9172	1.3261E-07
EU151	151 11.68	0	Eu151	0.001%	150.9198	4.4033E-07
EU153	153 59.07	0	Eu153	0.005%	152.9212	2.1978E-06
GD155	155 5.448	0	Gd155	0.000%	154.9227	2.0008E-07
U233	233 25.67	0	U233	0.002%	233.0395	6.2672E-07
U234	234 196.6	0.0001	U234	0.018%	234.0409	4.7794E-06
U235	235 17300	0.012	U235	1.553%	235.0439	4.1877E-04
U236	236 4207	0.0029	U236	0.378%	236.0456	1.0140E-04
U238	238 955900	0.6638	U238	85.829%	238.0508	2.2847E-02
NP237	237 984.3	0.0007	Np237	0.088%	237.0481	2.3625E-05
			Pu238	0.000%	238.0495	0.0000E+00
PU239	239 255.9	0.0002	Pu239	0.023%	239.0521	6.0906E-06
PU240	240 0.03255	0	Pu240	0.000%	240.0539	7.7148E-10
PU241	241 2.9E-08	0	Pu241	0.000%	241.0567	6.9321E-16
PU242	242 132.4	0.0001	Pu242	0.012%	242.0587	3.1121E-06
AM241	241 8.8E-07	0	Am241	0.000%	241.0567	2.0806E-14
			Am242m	0.000%	242.0595	0.0000E+00
AM243	243 0.001489	0	Am243	0.000%	243.0614	3.4855E-11
CM245	245 0.000018	0	Cm245	0.000%	245.0654	4.0861E-13
TOTAL	1440000 1.0001		1113729	100.00%		7.1199E-02

BURNUP:	20000			PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU			
ENRICHMEN	0.03			DECAY TIME: 200000 YEARS			
DECAY TIM	200000			Density	10.52		200000
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.060%	15.9949	4.7776E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7036E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0439E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3263E-07
EU151	151	11.68	0	Eu151	0.001%	150.9198	4.4037E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1979E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0010E-07
U233	233	41.53	0	U233	0.004%	233.0395	1.0140E-06
U234	234	160.8	0.0001	U234	0.014%	234.0409	3.9094E-06
U235	235	17530	0.0122	U235	1.574%	235.0439	4.2438E-04
U236	236	4195	0.0029	U236	0.377%	236.0456	1.0112E-04
U238	238	955900	0.6638	U238	85.836%	238.0508	2.2849E-02
NP237	237	952.9	0.0007	Np237	0.086%	237.0481	2.2873E-05
				Pu238	0.000%	238.0495	0.0000E+00
PU239	239	14.36	0	Pu239	0.001%	239.0521	3.4181E-07
PU240	240	1.1E-06	0	Pu240	0.000%	240.0539	2.5031E-14
PU241	241	8.4E-12	0	Pu241	0.000%	241.0567	1.9901E-19
PU242	242	110.7	0.0001	Pu242	0.010%	242.0587	2.6022E-06
AM241	241	2.7E-10	0	Am241	0.000%	241.0567	6.2930E-18
				Am242m	0.000%	242.0595	0.0000E+00
AM243	243	1.3E-07	0	Am243	0.000%	243.0614	3.1065E-15
CM245	245	5.0E-09	0	Cm245	0.000%	245.0654	1.1723E-16
TOTAL	1440000	1.0001		1113632	100.00%		7.1203E-02

BURNUP:	20000			PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU			
ENRICHMEN	0.03			DECAY TIME: 500000 YEARS			
DECAY TIM	500000			Density	10.52		500000
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.062%	15.9949	4.7786E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7040E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0444E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3265E-07
EU151	151	11.68	0	Eu151	0.001%	150.9198	4.4045E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1984E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0014E-07
U233	233	59.01	0	U233	0.005%	233.0395	1.4411E-06
U234	234	98.19	0.0001	U234	0.009%	234.0409	2.3877E-06
U235	235	17540	0.0122	U235	1.575%	235.0439	4.2470E-04
U236	236	4157	0.0029	U236	0.373%	236.0456	1.0023E-04
U238	238	955900	0.6638	U238	85.853%	238.0508	2.2853E-02
NP237	237	864.6	0.0006	Np237	0.078%	237.0481	2.0758E-05
				Pu238	0.000%	238.0495	0.0000E+00
PU239	239	0.002536	0	Pu239	0.000%	239.0521	6.0376E-11
PU240	240	2.4E-07	0	Pu240	0.000%	240.0539	5.6970E-15
PU241	241	2.0E-22	0	Pu241	0.000%	241.0567	4.7054E-30
PU242	242	64.67	0	Pu242	0.006%	242.0587	1.5205E-06
AM241	241	6.3E-21	0	Am241	0.000%	241.0567	1.4886E-28
				Am242m	0.000%	242.0595	0.0000E+00
AM243	243	8.2E-09	0	Am243	0.000%	243.0614	1.9223E-16
CM245	245	1.2E-19	0	Cm245	0.000%	245.0654	2.7729E-27
TOTAL	1440000	1.0001		1113410	100.00%		7.1212E-02

BURNUP: 20000 PWR, 3.00% Enriched, Burnup 20,000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 1000000 YEARS
DECAY TIM 1000000 Density 10.52 1000000

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.065%	15.9949	4.7798E-02
RH103	103	308.1	0.0002	Rh103	0.028%	102.9055	1.7044E-05
AG109	109	39.12	0	Ag109	0.004%	108.9048	2.0449E-06
SM149	149	3.471	0	Sm149	0.000%	148.9172	1.3269E-07
EU151	151	11.68	0	Eu151	0.001%	150.9198	4.4056E-07
EU153	153	59.07	0	Eu153	0.005%	152.9212	2.1989E-06
GD155	155	5.448	0	Gd155	0.000%	154.9227	2.0019E-07
U233	233	56.82	0	U233	0.005%	233.0395	1.3880E-06
U234	234	62.78	0	U234	0.006%	234.0409	1.5270E-06
U235	235	17530	0.0122	U235	1.575%	235.0439	4.2457E-04
U236	236	4096	0.0028	U236	0.368%	236.0456	9.8782E-05
U238	238	955900	0.6638	U238	85.875%	238.0508	2.2859E-02
NP237	237	735.4	0.0005	Np237	0.066%	237.0481	1.7660E-05
				Pu238	0.000%	238.0495	0.0000E+00
PU239	239	2.7E-08	0	Pu239	0.000%	239.0521	6.5010E-16
PU240	240	2.4E-07	0	Pu240	0.000%	240.0539	5.6724E-15
PU241	241	3.9E-40	0	Pu241	0.000%	241.0567	9.1745E-48
PU242	242	26.41	0	Pu242	0.002%	242.0587	6.2110E-07
AM241	241	1.2E-38	0	Am241	0.000%	241.0567	2.9000E-46
				Am242m	0.000%	242.0595	0.0000E+00
AM243	243	8.0E-09	0	Am243	0.000%	243.0614	1.8807E-16
CM245	245	2.3E-37	0	Cm245	0.000%	245.0654	5.4054E-45
TOTAL	1440000	1.0001		1113134	100.00%		7.1223E-02

Number Density = (Weight %) * (Density) * (Na) / (Aw)
Avogadro's Number [Na] = 0.602252
Atomic Weight [Aw]

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 1 YEARS
DECAY TIM 1 Density 10.52 1

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.250%	15.99492	4.8529E-02
RH103	103	482.4	0.0003	Rh103	0.044%	102.9055	2.7094E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1672E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5447E-07
EU151	151	0.146	0	Eu151	0.000%	150.9198	5.5913E-09
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0457E-06
GD155	155	2.113	0	Gd155	0.000%	154.9227	7.8831E-08
U233	233	0.00183	0	U233	0.000%	233.0395	4.5387E-11
U234	234	195.5	0.0001	U234	0.018%	234.0409	4.8280E-06
U235	235	9363	0.0065	U235	0.854%	235.0439	2.3024E-04
U236	236	4613	0.0032	U236	0.421%	236.0456	1.1295E-04
U238	238	936100	0.6501	U238	85.383%	238.0508	2.2728E-02
NP237	237	598.4	0.0004	Np237	0.055%	237.0481	1.4590E-05
PU238	238	201.8	0.0001	Pu238	0.018%	238.0495	4.8996E-06
PU239	239	5992	0.0042	Pu239	0.547%	239.0521	1.4487E-04
PU240	240	2316	0.0016	Pu240	0.211%	240.0539	5.5762E-05
PU241	241	1282	0.0009	Pu241	0.117%	241.0567	3.0738E-05
PU242	242	471.2	0.0003	Pu242	0.043%	242.0587	1.1251E-05
AM241	241	112.9	0.0001	Am241	0.010%	241.0567	2.7070E-06
AM242M	242	2.188	0	Am242m	0.000%	242.0595	5.2244E-08
AM243	243	102.2	0.0001	Am243	0.009%	243.0614	2.4302E-06
CM245	245	1.336	0	Cm245	0.000%	245.0654	3.1509E-08
TOTAL	1440000	0.9998		1096352	100.00%		7.1909E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 2 YEARS
DECAY TIM 2 Density 10.52 2

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.250%	15.9949	4.8529E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7100E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1672E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5447E-07
EU151	151	0.2773	0	Eu151	0.000%	150.9198	1.0620E-08
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0457E-06
GD155	155	3.844	0	Gd155	0.000%	154.9227	1.4341E-07
U233	233	0.002043	0	U233	0.000%	233.0395	5.0669E-11
U234	234	197.1	0.0001	U234	0.018%	234.0409	4.8675E-06
U235	235	9363	0.0065	U235	0.854%	235.0439	2.3024E-04
U236	236	4613	0.0032	U236	0.421%	236.0456	1.1295E-04
U238	238	936100	0.6501	U238	85.383%	238.0508	2.2728E-02
NP237	237	598.7	0.0004	Np237	0.055%	237.0481	1.4598E-05
PU238	238	202.7	0.0001	Pu238	0.018%	238.0495	4.9215E-06
PU239	239	5991	0.0042	Pu239	0.546%	239.0521	1.4485E-04
PU240	240	2318	0.0016	Pu240	0.211%	240.0539	5.5810E-05
PU241	241	1222	0.0008	Pu241	0.111%	241.0567	2.9299E-05
PU242	242	471.2	0.0003	Pu242	0.043%	242.0587	1.1251E-05
AM241	241	173	0.0001	Am241	0.016%	241.0567	4.1480E-06
AM242M	242	2.178	0	Am242m	0.000%	242.0595	5.2005E-08
AM243	243	102.2	0.0001	Am243	0.009%	243.0614	2.4302E-06
CM245	245	1.335	0	Cm245	0.000%	245.0654	3.1485E-08
TOTAL	1440000	0.9998		1096358	100.00%		7.1909E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 3 YEARS
DECAY TIM 3 Density 10.52 3

ISOTOPE		GRAMS/MTIHM	%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.250%	15.9949	4.8529E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7100E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1672E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5447E-07
EU151	151	0.4077	0	Eu151	0.000%	150.9198	1.5614E-08
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0457E-06
GD155	155	5.349	0	Gd155	0.000%	154.9227	1.9956E-07
U233	233	0.002254	0	U233	0.000%	233.0395	5.5902E-11
U234	234	198.8	0.0001	U234	0.018%	234.0409	4.9094E-06
U235	235	9363	0.0065	U235	0.854%	235.0439	2.3024E-04
U236	236	4614	0.0032	U236	0.421%	236.0456	1.1298E-04
U238	238	936100	0.6501	U238	85.382%	238.0508	2.2728E-02
NP237	237	599	0.0004	Np237	0.055%	237.0481	1.4605E-05
PU238	238	201.5	0.0001	Pu238	0.018%	238.0495	4.8923E-06
PU239	239	5991	0.0042	Pu239	0.546%	239.0521	1.4485E-04
PU240	240	2319	0.0016	Pu240	0.212%	240.0539	5.5834E-05
PU241	241	1164	0.0008	Pu241	0.106%	241.0567	2.7909E-05
PU242	242	471.2	0.0003	Pu242	0.043%	242.0587	1.1251E-05
AM241	241	230	0.0002	Am241	0.021%	241.0567	5.5146E-06
AM242M	242	2.169	0	Am242m	0.000%	242.0595	5.1790E-08
AM243	243	102.2	0.0001	Am243	0.009%	243.0614	2.4302E-06
CM245	245	1.335	0	Cm245	0.000%	245.0654	3.1485E-08
TOTAL	1440000	0.9998		1096361	100.00%		7.1909E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 5 YEARS
DECAY TIM 5 Density 10.52 5

ISOTOPE		GRAMS/MTIHM	%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.250%	15.9949	4.8529E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7100E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1671E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5447E-07
EU151	151	0.6652	0	Eu151	0.000%	150.9198	2.5475E-08
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0457E-06
GD155	155	7.797	0	Gd155	0.001%	154.9227	2.9088E-07
U233	233	0.002657	0	U233	0.000%	233.0395	6.5897E-11
U234	234	202.1	0.0001	U234	0.018%	234.0409	4.9909E-06
U235	235	9364	0.0065	U235	0.854%	235.0439	2.3026E-04
U236	236	4614	0.0032	U236	0.421%	236.0456	1.1298E-04
U238	238	936100	0.6501	U238	85.382%	238.0508	2.2728E-02
NP237	237	599.9	0.0004	Np237	0.055%	237.0481	1.4627E-05
PU238	238	198.5	0.0001	Pu238	0.018%	238.0495	4.8194E-06
PU239	239	5991	0.0042	Pu239	0.546%	239.0521	1.4485E-04
PU240	240	2320	0.0016	Pu240	0.212%	240.0539	5.5858E-05
PU241	241	1058	0.0007	Pu241	0.097%	241.0567	2.5367E-05
PU242	242	471.2	0.0003	Pu242	0.043%	242.0587	1.1251E-05
AM241	241	336	0.0002	Am241	0.031%	241.0567	8.0561E-06
AM242M	242	2.149	0	Am242m	0.000%	242.0595	5.1312E-08
AM243	243	102.2	0.0001	Am243	0.009%	243.0614	2.4302E-06
CM245	245	1.335	0	Cm245	0.000%	245.0654	3.1485E-08
TOTAL	1440000	0.9998		1096367	100.00%		7.1909E-02

BURNUP:	37000			PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU				
ENRICHMEN	0.0375			DECAY TIME:		10 YEARS		
DECAY TIM	10			Density	10.52			10
								Number
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%		Aw	Density
O 16	16	134300	0.0933	O 16	12.249%		15.9949	4.8528E-02
RH103	103	482.5	0.0003	Rh103	0.044%		102.9055	2.7099E-05
AG109	109	78.52	0.0001	Ag109	0.007%		108.9048	4.1671E-06
SM149	149	3.98	0	Sm149	0.000%		148.9172	1.5447E-07
EU151	151	1.292	0	Eu151	0.000%		150.9198	4.9478E-08
EU153	153	133.5	0.0001	Eu153	0.012%		152.9212	5.0456E-06
GD155	155	11.61	0	Gd155	0.001%		154.9227	4.3313E-07
U233	233	0.003615	0	U233	0.000%		233.0395	8.9656E-11
U234	234	210.2	0.0001	U234	0.019%		234.0409	5.1909E-06
U235	235	9364	0.0065	U235	0.854%		235.0439	2.3026E-04
U236	236	4615	0.0032	U236	0.421%		236.0456	1.1300E-04
U238	238	936100	0.6501	U238	85.381%		238.0508	2.2728E-02
NP237	237	603.5	0.0004	Np237	0.055%		237.0481	1.4714E-05
PU238	238	190.9	0.0001	Pu238	0.017%		238.0495	4.6349E-06
PU239	239	5990	0.0042	Pu239	0.546%		239.0521	1.4482E-04
PU240	240	2325	0.0016	Pu240	0.212%		240.0539	5.5978E-05
PU241	241	831.3	0.0006	Pu241	0.076%		241.0567	1.9931E-05
PU242	242	471.2	0.0003	Pu242	0.043%		242.0587	1.1251E-05
AM241	241	558.7	0.0004	Am241	0.051%		241.0567	1.3396E-05
AM242M	242	2.1	0	Am242m	0.000%		242.0595	5.0142E-08
AM243	243	102.2	0.0001	Am243	0.009%		243.0614	2.4302E-06
CM245	245	1.334	0	Cm245	0.000%		245.0654	3.1461E-08
TOTAL	1440000	0.9998		1096377	100.00%			7.1908E-02

BURNUP:	37000			PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU				
ENRICHMEN	0.0375			DECAY TIME:		15 YEARS		
DECAY TIM	15			Density	10.52			15
								Number
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%		Aw	Density
O 16	16	134300	0.0933	O 16	12.249%		15.9949	4.8528E-02
RH103	103	482.5	0.0003	Rh103	0.044%		102.9055	2.7099E-05
AG109	109	78.52	0.0001	Ag109	0.007%		108.9048	4.1671E-06
SM149	149	3.98	0	Sm149	0.000%		148.9172	1.5447E-07
EU151	151	1.896	0	Eu151	0.000%		150.9198	7.2609E-08
EU153	153	133.5	0.0001	Eu153	0.012%		152.9212	5.0456E-06
GD155	155	13.51	0	Gd155	0.001%		154.9227	5.0401E-07
U233	233	0.00458	0	U233	0.000%		233.0395	1.1359E-10
U234	234	217.8	0.0002	U234	0.020%		234.0409	5.3785E-06
U235	235	9364	0.0065	U235	0.854%		235.0439	2.3026E-04
U236	236	4617	0.0032	U236	0.421%		236.0456	1.1305E-04
U238	238	936100	0.6501	U238	85.381%		238.0508	2.2727E-02
NP237	237	608.6	0.0004	Np237	0.056%		237.0481	1.4839E-05
PU238	238	183.5	0.0001	Pu238	0.017%		238.0495	4.4552E-06
PU239	239	5989	0.0042	Pu239	0.546%		239.0521	1.4480E-04
PU240	240	2328	0.0016	Pu240	0.212%		240.0539	5.6050E-05
PU241	241	653.5	0.0005	Pu241	0.060%		241.0567	1.5668E-05
PU242	242	471.2	0.0003	Pu242	0.043%		242.0587	1.1251E-05
AM241	241	731.3	0.0005	Am241	0.067%		241.0567	1.7534E-05
AM242M	242	2.053	0	Am242m	0.000%		242.0595	4.9019E-08
AM243	243	102.1	0.0001	Am243	0.009%		243.0614	2.4278E-06
CM245	245	1.334	0	Cm245	0.000%		245.0654	3.1461E-08
TOTAL	1440000	0.9998		1096383	100.00%			7.1908E-02

BURNUP: 37000
ENRICHMEN 0.0375
DECAY TIM 20

PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
DECAY TIME: 20 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	20 Number Density
O 16	16	134300	0.0933	O 16	12.249%	15.9949	4.8528E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7099E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1671E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5447E-07
EU151	151	2.476	0	Eu151	0.000%	150.9198	9.4820E-08
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0456E-06
GD155	155	14.45	0	Gd155	0.001%	154.9227	5.3907E-07
U233	233	0.005554	0	U233	0.000%	233.0395	1.3774E-10
U234	234	225.2	0.0002	U234	0.021%	234.0409	5.5612E-06
U235	235	9365	0.0065	U235	0.854%	235.0439	2.3028E-04
U236	236	4618	0.0032	U236	0.421%	236.0456	1.1307E-04
U238	238	936100	0.6501	U238	85.380%	238.0508	2.2727E-02
NP237	237	615	0.0004	Np237	0.056%	237.0481	1.4995E-05
PU238	238	176.5	0.0001	Pu238	0.016%	238.0495	4.2852E-06
PU239	239	5989	0.0042	Pu239	0.546%	239.0521	1.4480E-04
PU240	240	2330	0.0016	Pu240	0.213%	240.0539	5.6097E-05
PU241	241	513.7	0.0004	Pu241	0.047%	241.0567	1.2316E-05
PU242	242	471.2	0.0003	Pu242	0.043%	242.0587	1.1251E-05
AM241	241	864.7	0.0006	Am241	0.079%	241.0567	2.0732E-05
AM242M	242	2.006	0	Am242m	0.000%	242.0595	4.7897E-08
AM243	243	102.1	0.0001	Am243	0.009%	243.0614	2.4278E-06
CM245	245	1.333	0	Cm245	0.000%	245.0654	3.1437E-08
TOTAL	1440000	0.9998		1096389	100.00%		7.1908E-02

BURNUP: 37000
ENRICHMEN 0.0375
DECAY TIM 30

PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
DECAY TIME: 30 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	30 Number Density
O 16	16	134300	0.0933	O 16	12.249%	15.9949	4.8527E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7099E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1670E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5446E-07
EU151	151	3.571	0	Eu151	0.000%	150.9198	1.3675E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0455E-06
GD155	155	15.16	0	Gd155	0.001%	154.9227	5.6556E-07
U233	233	0.007536	0	U233	0.000%	233.0395	1.8690E-10
U234	234	238.9	0.0002	U234	0.022%	234.0409	5.8995E-06
U235	235	9369	0.0065	U235	0.855%	235.0439	2.3038E-04
U236	236	4620	0.0032	U236	0.421%	236.0456	1.1312E-04
U238	238	936100	0.6501	U238	85.380%	238.0508	2.2727E-02
NP237	237	630.2	0.0004	Np237	0.057%	237.0481	1.5365E-05
PU238	238	163.1	0.0001	Pu238	0.015%	238.0495	3.9598E-06
PU239	239	5987	0.0042	Pu239	0.546%	239.0521	1.4475E-04
PU240	240	2333	0.0016	Pu240	0.213%	240.0539	5.6169E-05
PU241	241	317.4	0.0002	Pu241	0.029%	241.0567	7.6099E-06
PU242	242	471.2	0.0003	Pu242	0.043%	242.0587	1.1251E-05
AM241	241	1046	0.0007	Am241	0.095%	241.0567	2.5079E-05
AM242M	242	1.917	0	Am242m	0.000%	242.0595	4.5771E-08
AM243	243	102	0.0001	Am243	0.009%	243.0614	2.4254E-06
CM245	245	1.332	0	Cm245	0.000%	245.0654	3.1413E-08
TOTAL	1440000	0.9999		1096398	100.00%		7.1908E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 50 YEARS
DECAY TIM 50 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	50 Number Density
O 16	16	134300	0.0933	O 16	12.249%	15.9949	4.8527E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7099E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1670E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5446E-07
EU151	151	5.526	0	Eu151	0.001%	150.9198	2.1162E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0455E-06
GD155	155	15.37	0	Gd155	0.001%	154.9227	5.7339E-07
U233	233	0.01166	0	U233	0.000%	233.0395	2.8917E-10
U234	234	263.5	0.0002	U234	0.024%	234.0409	6.5070E-06
U235	235	9371	0.0065	U235	0.855%	235.0439	2.3042E-04
U236	236	4625	0.0032	U236	0.422%	236.0456	1.1324E-04
U238	238	936100	0.6501	U238	85.379%	238.0508	2.2727E-02
NP237	237	666.5	0.0005	Np237	0.061%	237.0481	1.6250E-05
PU238	238	139.5	0.0001	Pu238	0.013%	238.0495	3.3868E-06
PU239	239	5984	0.0042	Pu239	0.546%	239.0521	1.4467E-04
PU240	240	2334	0.0016	Pu240	0.213%	240.0539	5.6193E-05
PU241	241	121.3	0.0001	Pu241	0.011%	241.0567	2.9082E-06
PU242	242	471.2	0.0003	Pu242	0.043%	242.0587	1.1251E-05
AM241	241	1205	0.0008	Am241	0.110%	241.0567	2.8891E-05
AM242M	242	1.75	0	Am242m	0.000%	242.0595	4.1784E-08
AM243	243	101.8	0.0001	Am243	0.009%	243.0614	2.4206E-06
CM245	245	1.33	0	Cm245	0.000%	245.0654	3.1366E-08
TOTAL	1440000	0.9999		1096405	100.00%		7.1907E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 100 YEARS
DECAY TIM 100 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	100 Number Density
O 16	16	134300	0.0933	O 16	12.249%	15.9949	4.8527E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7098E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1670E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5446E-07
EU151	151	9.278	0	Eu151	0.001%	150.9198	3.5530E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0454E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7413E-07
U233	233	0.02304	0	U233	0.000%	233.0395	5.7140E-10
U234	234	309.8	0.0002	U234	0.028%	234.0409	7.6502E-06
U235	235	9381	0.0065	U235	0.856%	235.0439	2.3067E-04
U236	236	4638	0.0032	U236	0.423%	236.0456	1.1356E-04
U238	238	936100	0.6501	U238	85.378%	238.0508	2.2727E-02
NP237	237	764	0.0005	Np237	0.070%	237.0481	1.8627E-05
PU238	238	94.19	0.0001	Pu238	0.009%	238.0495	2.2868E-06
PU239	239	5976	0.0042	Pu239	0.545%	239.0521	1.4448E-04
PU240	240	2326	0.0016	Pu240	0.212%	240.0539	5.6000E-05
PU241	241	10.92	0	Pu241	0.001%	241.0567	2.6181E-07
PU242	242	471.3	0.0003	Pu242	0.043%	242.0587	1.1253E-05
AM241	241	1217	0.0008	Am241	0.111%	241.0567	2.9178E-05
AM242M	242	1.393	0	Am242m	0.000%	242.0595	3.3259E-08
AM243	243	101.3	0.0001	Am243	0.009%	243.0614	2.4087E-06
CM245	245	1.325	0	Cm245	0.000%	245.0654	3.1248E-08
TOTAL	1440000	0.9998		1096415	100.00%		7.1907E-02

BURNUP:	37000			PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU			
ENRICHMEN	0.0375			DECAY TIME:	200 YEARS		
DECAY TIM	200			Density	10.52		200
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.249%	15.9949	4.8526E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7098E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1669E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5446E-07
EU151	151	13.57	0	Eu151	0.001%	150.9198	5.1966E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0454E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7413E-07
U233	233	0.05028	0	U233	0.000%	233.0395	1.2470E-09
U234	234	361.7	0.0003	U234	0.033%	234.0409	8.9318E-06
U235	235	9400	0.0065	U235	0.857%	235.0439	2.3113E-04
U236	236	4661	0.0032	U236	0.425%	236.0456	1.1412E-04
U238	238	936100	0.6501	U238	85.378%	238.0508	2.2727E-02
NP237	237	943.2	0.0007	Np237	0.086%	237.0481	2.2996E-05
PU238	238	43.02	0	Pu238	0.004%	238.0495	1.0444E-06
PU239	239	5960	0.0041	Pu239	0.544%	239.0521	1.4409E-04
PU240	240	2302	0.0016	Pu240	0.210%	240.0539	5.5422E-05
PU241	241	0.09112	0	Pu241	0.000%	241.0567	2.1846E-09
PU242	242	471.3	0.0003	Pu242	0.043%	242.0587	1.1253E-05
AM241	241	1046	0.0007	Am241	0.095%	241.0567	2.5078E-05
AM242M	242	0.8829	0	Am242m	0.000%	242.0595	2.1080E-08
AM243	243	100.4	0.0001	Am243	0.009%	243.0614	2.3873E-06
CM245	245	1.314	0	Cm245	0.000%	245.0654	3.0988E-08
TOTAL	1440000	0.9998		1096418	100.00%		7.1907E-02

BURNUP:	37000			PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU			
ENRICHMEN	0.0375			DECAY TIME:	300 YEARS		
DECAY TIM	300			Density	10.52		300
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.249%	15.9949	4.8527E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7098E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1670E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5446E-07
EU151	151	15.55	0	Eu151	0.001%	150.9198	5.9548E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0454E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7413E-07
U233	233	0.08279	0	U233	0.000%	233.0395	2.0532E-09
U234	234	385.4	0.0003	U234	0.035%	234.0409	9.5171E-06
U235	235	9414	0.0065	U235	0.859%	235.0439	2.3148E-04
U236	236	4686	0.0033	U236	0.427%	236.0456	1.1473E-04
U238	238	936100	0.6501	U238	85.378%	238.0508	2.2727E-02
NP237	237	1096	0.0008	Np237	0.100%	237.0481	2.6721E-05
PU238	238	19.7	0	Pu238	0.002%	238.0495	4.7828E-07
PU239	239	5943	0.0041	Pu239	0.542%	239.0521	1.4368E-04
PU240	240	2278	0.0016	Pu240	0.208%	240.0539	5.4844E-05
PU241	241	0.002991	0	Pu241	0.000%	241.0567	7.1710E-11
PU242	242	471.2	0.0003	Pu242	0.043%	242.0587	1.1250E-05
AM241	241	891.1	0.0006	Am241	0.081%	241.0567	2.1364E-05
AM242M	242	0.5597	0	Am242m	0.000%	242.0595	1.3363E-08
AM243	243	99.41	0.0001	Am243	0.009%	243.0614	2.3637E-06
CM245	245	1.304	0	Cm245	0.000%	245.0654	3.0753E-08
TOTAL	1440000	0.9998		1096415	100.00%		7.1907E-02

BURNUP: 37000
ENRICHMEN 0.0375
DECAY TIM 500

PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
DECAY TIME: 500 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	500 Number Density
O 16	16 134300	0.0933	O 16	12.249%	15.9949	4.8527E-02
RH103	103 482.5	0.0003	Rh103	0.044%	102.9055	2.7098E-05
AG109	109 78.52	0.0001	Ag109	0.007%	108.9048	4.1670E-06
SM149	149 3.98	0	Sm149	0.000%	148.9172	1.5446E-07
EU151	151 16.89	0	Eu151	0.002%	150.9198	6.4680E-07
EU153	153 133.5	0.0001	Eu153	0.012%	152.9212	5.0454E-06
GD155	155 15.39	0	Gd155	0.001%	154.9227	5.7413E-07
U233	233 0.1606	0	U233	0.000%	233.0395	3.9829E-09
U234	234 401	0.0003	U234	0.037%	234.0409	9.9024E-06
U235	235 9450	0.0066	U235	0.862%	235.0439	2.3236E-04
U236	236 4732	0.0033	U236	0.432%	236.0456	1.1586E-04
U238	238 936100	0.6501	U238	85.378%	238.0508	2.2727E-02
NP237	237 1336	0.0009	Np237	0.122%	237.0481	3.2573E-05
PU238	238 4.181	0	Pu238	0.000%	238.0495	1.0151E-07
PU239	239 5911	0.0041	Pu239	0.539%	239.0521	1.4291E-04
PU240	240 2230	0.0015	Pu240	0.203%	240.0539	5.3689E-05
PU241	241 0.002141	0	Pu241	0.000%	241.0567	5.1331E-11
PU242	242 471.1	0.0003	Pu242	0.043%	242.0587	1.1248E-05
AM241	241 646.7	0.0004	Am241	0.059%	241.0567	1.5505E-05
AM242M	242 0.2249	0	Am242m	0.000%	242.0595	5.3697E-09
AM243	243 97.56	0.0001	Am243	0.009%	243.0614	2.3198E-06
CM245	245 1.282	0	Cm245	0.000%	245.0654	3.0234E-08
TOTAL	1440000	0.9998	1096412	100.00%		7.1908E-02

BURNUP: 37000
ENRICHMEN 0.0375
DECAY TIM 1000

PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
DECAY TIME: 1000 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	1000 Number Density
O 16	16 134300	0.0933	O 16	12.249%	15.9949	4.8527E-02
RH103	103 482.5	0.0003	Rh103	0.044%	102.9055	2.7099E-05
AG109	109 78.52	0.0001	Ag109	0.007%	108.9048	4.1670E-06
SM149	149 3.98	0	Sm149	0.000%	148.9172	1.5446E-07
EU151	151 17.25	0	Eu151	0.002%	150.9198	6.6059E-07
EU153	153 133.5	0.0001	Eu153	0.012%	152.9212	5.0455E-06
GD155	155 15.39	0	Gd155	0.001%	154.9227	5.7413E-07
U233	233 0.4044	0	U233	0.000%	233.0395	1.0029E-08
U234	234 404.7	0.0003	U234	0.037%	234.0409	9.9938E-06
U235	235 9534	0.0066	U235	0.870%	235.0439	2.3443E-04
U236	236 4846	0.0034	U236	0.442%	236.0456	1.1865E-04
U238	238 936100	0.6501	U238	85.379%	238.0508	2.2727E-02
NP237	237 1688	0.0012	Np237	0.154%	237.0481	4.1155E-05
PU238	238 0.1013	0	Pu238	0.000%	238.0495	2.4594E-09
PU239	239 5831	0.004	Pu239	0.532%	239.0521	1.4097E-04
PU240	240 2115	0.0015	Pu240	0.193%	240.0539	5.0920E-05
PU241	241 0.002055	0	Pu241	0.000%	241.0567	4.9270E-11
PU242	242 470.7	0.0003	Pu242	0.043%	242.0587	1.1239E-05
AM241	241 290	0.0002	Am241	0.026%	241.0567	6.9529E-06
AM242M	242 0.023	0	Am242m	0.000%	242.0595	5.4915E-10
AM243	243 93.12	0.0001	Am243	0.008%	243.0614	2.2142E-06
CM245	245 1.231	0	Cm245	0.000%	245.0654	2.9031E-08
TOTAL	1440000	0.9998	1096405	100.00%		7.1908E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 2000 YEARS
DECAY TIM 2000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	2000 Number Density
O 16	16	134300	0.0933	O 16	12.249%	15.9949	4.8527E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7099E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1670E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5447E-07
EU151	151	17.26	0	Eu151	0.002%	150.9198	6.6098E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0455E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7414E-07
U233	233	0.9848	0	U233	0.000%	233.0395	2.4424E-08
U234	234	403.9	0.0003	U234	0.037%	234.0409	9.9741E-06
U235	235	9700	0.0067	U235	0.885%	235.0439	2.3851E-04
U236	236	5056	0.0035	U236	0.461%	236.0456	1.2380E-04
U238	238	936100	0.6501	U238	85.380%	238.0508	2.2727E-02
NP237	237	1915	0.0013	Np237	0.175%	237.0481	4.6690E-05
PU238	238	0.000151	0	Pu238	0.000%	238.0495	3.6588E-12
PU239	239	5674	0.0039	Pu239	0.518%	239.0521	1.3718E-04
PU240	240	1902	0.0013	Pu240	0.173%	240.0539	4.5792E-05
PU241	241	0.001894	0	Pu241	0.000%	241.0567	4.5410E-11
PU242	242	469.9	0.0003	Pu242	0.043%	242.0587	1.1220E-05
AM241	241	58.4	0	Am241	0.005%	241.0567	1.4002E-06
AM242M	242	0.000241	0	Am242m	0.000%	242.0595	5.7471E-12
AM243	243	84.74	0.0001	Am243	0.008%	243.0614	2.0150E-06
CM245	245	1.135	0	Cm245	0.000%	245.0654	2.6767E-08
TOTAL	1440000	0.9998		1096397	100.00%		7.1909E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 5000 YEARS
DECAY TIM 5000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	5000 Number Density
O 16	16	134300	0.0933	O 16	12.249%	15.9949	4.8528E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7099E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1671E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5447E-07
EU151	151	17.26	0	Eu151	0.002%	150.9198	6.6099E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0456E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7414E-07
U233	233	2.831	0	U233	0.000%	233.0395	7.0211E-08
U234	234	400.8	0.0003	U234	0.037%	234.0409	9.8977E-06
U235	235	10170	0.0071	U235	0.928%	235.0439	2.5007E-04
U236	236	5567	0.0039	U236	0.508%	236.0456	1.3631E-04
U238	238	936100	0.6501	U238	85.381%	238.0508	2.2727E-02
NP237	237	1970	0.0014	Np237	0.180%	237.0481	4.8032E-05
PU238	238	3.1E-10	0	Pu238	0.000%	238.0495	7.4585E-18
PU239	239	5225	0.0036	Pu239	0.477%	239.0521	1.2633E-04
PU240	240	1384	0.001	Pu240	0.126%	240.0539	3.3322E-05
PU241	241	0.001483	0	Pu241	0.000%	241.0567	3.5557E-11
PU242	242	467.5	0.0003	Pu242	0.043%	242.0587	1.1162E-05
AM241	241	0.5274	0	Am241	0.000%	241.0567	1.2645E-08
AM242M	242	2.8E-10	0	Am242m	0.000%	242.0595	6.5804E-18
AM243	243	63.94	0	Am243	0.006%	243.0614	1.5204E-06
CM245	245	0.8885	0	Cm245	0.000%	245.0654	2.0954E-08
TOTAL	1440000	0.9998		1096384	100.00%		7.1910E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 10000 YEARS
DECAY TIM 10000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	10000 Number Density
O 16	16	134300	0.0933	O 16	12.250%	15.9949	4.8529E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7100E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1671E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5447E-07
EU151	151	17.26	0	Eu151	0.002%	150.9198	6.6100E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0457E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7416E-07
U233	233	5.872	0	U233	0.001%	233.0395	1.4563E-07
U234	234	396	0.0003	U234	0.036%	234.0409	9.7793E-06
U235	235	10870	0.0075	U235	0.991%	235.0439	2.6729E-04
U236	236	6128	0.0043	U236	0.559%	236.0456	1.5005E-04
U238	238	936100	0.6501	U238	85.382%	238.0508	2.2728E-02
NP237	237	1968	0.0014	Np237	0.180%	237.0481	4.7984E-05
PU238	238	3.9E-20	0	Pu238	0.000%	238.0495	9.3549E-28
PU239	239	4546	0.0032	Pu239	0.415%	239.0521	1.0991E-04
PU240	240	814.3	0.0006	Pu240	0.074%	240.0539	1.9606E-05
PU241	241	0.000986	0	Pu241	0.000%	241.0567	2.3648E-11
PU242	242	463.3	0.0003	Pu242	0.042%	242.0587	1.1062E-05
AM241	241	0.02981	0	Am241	0.000%	241.0567	7.1474E-10
AM242M	242	3.5E-20	0	Am242m	0.000%	242.0595	8.2496E-28
AM243	243	39.98	0	Am243	0.004%	243.0614	9.5068E-07
CM245	245	0.5908	0	Cm245	0.000%	245.0654	1.3934E-08
TOTAL	1440000	0.9998		1096363	100.00%		7.1911E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 20000 YEARS
DECAY TIM 20000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	20000 Number Density
O 16	16	134300	0.0933	O 16	12.250%	15.9949	4.8530E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7100E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1672E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5447E-07
EU151	151	17.26	0	Eu151	0.002%	150.9198	6.6101E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0458E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7416E-07
U233	233	11.75	0	U233	0.001%	233.0395	2.9142E-07
U234	234	386.3	0.0003	U234	0.035%	234.0409	9.5399E-06
U235	235	12020	0.0083	U235	1.096%	235.0439	2.9558E-04
U236	236	6651	0.0046	U236	0.607%	236.0456	1.6286E-04
U238	238	936100	0.6501	U238	85.384%	238.0508	2.2728E-02
NP237	237	1962	0.0014	Np237	0.179%	237.0481	4.7838E-05
PU238	238	6.1E-40	0	Pu238	0.000%	238.0495	1.4701E-47
PU239	239	3430	0.0024	Pu239	0.313%	239.0521	8.2930E-05
PU240	240	282.1	0.0002	Pu240	0.026%	240.0539	6.7921E-06
PU241	241	0.000436	0	Pu241	0.000%	241.0567	1.0461E-11
PU242	242	455.1	0.0003	Pu242	0.042%	242.0587	1.0867E-05
AM241	241	0.01309	0	Am241	0.000%	241.0567	3.1386E-10
AM242M	242	5.4E-40	0	Am242m	0.000%	242.0595	1.2968E-47
AM243	243	15.63	0	Am243	0.001%	243.0614	3.7167E-07
CM245	245	0.2613	0	Cm245	0.000%	245.0654	6.1627E-09
TOTAL	1440000	0.9998		1096345	100.00%		7.1913E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 50000 YEARS
DECAY TIM 50000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	50000 Number Density
O 16	16	134300	0.0933	O 16	12.251%	15.9949	4.8533E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7102E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1675E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5448E-07
EU151	151	17.26	0	Eu151	0.002%	150.9198	6.6105E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0461E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7420E-07
U233	233	27.78	0	U233	0.003%	233.0395	6.8904E-07
U234	234	359	0.0002	U234	0.033%	234.0409	8.8663E-06
U235	235	14000	0.0097	U235	1.277%	235.0439	3.4429E-04
U236	236	6912	0.0048	U236	0.631%	236.0456	1.6926E-04
U238	238	936100	0.6501	U238	85.389%	238.0508	2.2730E-02
NP237	237	1943	0.0013	Np237	0.177%	237.0481	4.7378E-05
PU238	238	0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239	1454	0.001	Pu239	0.133%	239.0521	3.5157E-05
PU240	240	11.72	0	Pu240	0.001%	240.0539	2.8220E-07
PU241	241	0.000038	0	Pu241	0.000%	241.0567	9.0567E-13
PU242	242	431.3	0.0003	Pu242	0.039%	242.0587	1.0299E-05
AM241	241	0.001134	0	Am241	0.000%	241.0567	2.7192E-11
AM242M	242	0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243	0.9339	0	Am243	0.000%	243.0614	2.2209E-08
CM245	245	0.02263	0	Cm245	0.000%	245.0654	5.3376E-10
TOTAL	1440000	0.9998		1096271	100.00%		7.1917E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 100000 YEARS
DECAY TIM 100000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	100000 Number Density
O 16	16	134300	0.0933	O 16	12.252%	15.9949	4.8538E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7105E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1679E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5450E-07
EU151	151	17.26	0	Eu151	0.002%	150.9198	6.6112E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0466E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7426E-07
U233	233	49.88	0	U233	0.005%	233.0395	1.2373E-06
U234	234	318.3	0.0002	U234	0.029%	234.0409	7.8619E-06
U235	235	15100	0.0105	U235	1.378%	235.0439	3.7137E-04
U236	236	6913	0.0048	U236	0.631%	236.0456	1.6930E-04
U238	238	936100	0.6501	U238	85.398%	238.0508	2.2732E-02
NP237	237	1912	0.0013	Np237	0.174%	237.0481	4.6627E-05
PU238	238	0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239	344.7	0.0002	Pu239	0.031%	239.0521	8.3355E-06
PU240	240	0.05841	0	Pu240	0.000%	240.0539	1.4066E-09
PU241	241	6.4E-07	0	Pu241	0.000%	241.0567	1.5345E-14
PU242	242	394.4	0.0003	Pu242	0.036%	242.0587	9.4189E-06
AM241	241	0.000019	0	Am241	0.000%	241.0567	4.6067E-13
AM242M	242	0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243	0.00853	0	Am243	0.000%	243.0614	2.0287E-10
CM245	245	0.000383	0	Cm245	0.000%	245.0654	9.0415E-12
TOTAL	1440000	0.9998		1096163	100.00%		7.1922E-02

BURNUP: 37000
ENRICHMEN 0.0375
DECAY TIM 200000

PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
DECAY TIME: 200000 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	200000 Number Density
O 16	16	134300	0.0933	O 16	12.253%	15.9949	4.8542E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7107E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1682E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5451E-07
EU151	151	17.26	0	Eu151	0.002%	150.9198	6.6117E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0470E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7431E-07
U233	233	80.68	0.0001	U233	0.007%	233.0395	2.0015E-06
U234	234	252.3	0.0002	U234	0.023%	234.0409	6.2322E-06
U235	235	15420	0.0107	U235	1.407%	235.0439	3.7928E-04
U236	236	6892	0.0048	U236	0.629%	236.0456	1.6880E-04
U238	238	936200	0.6501	U238	85.414%	238.0508	2.2736E-02
NP237	237	1851	0.0013	Np237	0.169%	237.0481	4.5143E-05
PU238	238	0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239	19.33	0	Pu239	0.002%	239.0521	4.6748E-07
PU240	240	3.7E-06	0	Pu240	0.000%	240.0539	8.8987E-14
PU241	241	1.8E-10	0	Pu241	0.000%	241.0567	4.4056E-18
PU242	242	329.7	0.0002	Pu242	0.030%	242.0587	7.8744E-06
AM241	241	5.8E-09	0	Am241	0.000%	241.0567	1.3929E-16
AM242M	242	0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243	1.5E-06	0	Am243	0.000%	243.0614	3.4512E-14
CM245	245	1.1E-07	0	Cm245	0.000%	245.0654	2.5950E-15
TOTAL	1440000	0.9999		1096076	100.00%		7.1925E-02

BURNUP: 37000
ENRICHMEN 0.0375
DECAY TIM 500000

PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
DECAY TIME: 500000 YEARS
Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	500000 Number Density
O 16	16	134300	0.0933	O 16	12.258%	15.9949	4.8562E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7118E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1700E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5458E-07
EU151	151	17.26	0	Eu151	0.002%	150.9198	6.6145E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0491E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7455E-07
U233	233	114.6	0.0001	U233	0.010%	233.0395	2.8442E-06
U234	234	137	0.0001	U234	0.013%	234.0409	3.3856E-06
U235	235	15430	0.0107	U235	1.408%	235.0439	3.7968E-04
U236	236	6832	0.0047	U236	0.624%	236.0456	1.6740E-04
U238	238	936200	0.6501	U238	85.450%	238.0508	2.2746E-02
NP237	237	1680	0.0012	Np237	0.153%	237.0481	4.0990E-05
PU238	238	0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239	0.003419	0	Pu239	0.000%	239.0521	8.2719E-11
PU240	240	2.2E-06	0	Pu240	0.000%	240.0539	5.2475E-14
PU241	241	4.3E-21	0	Pu241	0.000%	241.0567	1.0422E-28
PU242	242	192.6	0.0001	Pu242	0.018%	242.0587	4.6019E-06
AM241	241	1.4E-19	0	Am241	0.000%	241.0567	3.2966E-27
AM242M	242	0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243	6.7E-07	0	Am243	0.000%	243.0614	1.5847E-14
CM245	245	2.6E-18	0	Cm245	0.000%	245.0654	6.1408E-26
TOTAL	1440000	0.9998		1095617	100.00%		7.1944E-02

BURNUP: 37000 PWR, 3.75% Enriched, Burnup 37.000 GWd/MTU
ENRICHMEN 0.0375 DECAY TIME: 1000000 YEARS
DECAY TIM 1000000 Density 10.52 1000000

ISOTOPE		GRAMS/MTIHM	%TOTAL	Element	%	Aw	Number Density
O 16	16	134300	0.0933	O 16	12.264%	15.9949	4.8586E-02
RH103	103	482.5	0.0003	Rh103	0.044%	102.9055	2.7132E-05
AG109	109	78.52	0.0001	Ag109	0.007%	108.9048	4.1721E-06
SM149	149	3.98	0	Sm149	0.000%	148.9172	1.5465E-07
EU151	151	17.26	0	Eu151	0.002%	150.9198	6.6178E-07
EU153	153	133.5	0.0001	Eu153	0.012%	152.9212	5.0516E-06
GD155	155	15.39	0	Gd155	0.001%	154.9227	5.7483E-07
U233	233	110.4	0.0001	U233	0.010%	233.0395	2.7413E-06
U234	234	71.5	0	U234	0.007%	234.0409	1.7678E-06
U235	235	15420	0.0107	U235	1.408%	235.0439	3.7962E-04
U236	236	6731	0.0047	U236	0.615%	236.0456	1.6501E-04
U238	238	936200	0.6501	U238	85.492%	238.0508	2.2757E-02
NP237	237	1429	0.001	Np237	0.130%	237.0481	3.4883E-05
PU238	238	0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239	2.1E-06	0	Pu239	0.000%	239.0521	5.0639E-14
PU240	240	2.2E-06	0	Pu240	0.000%	240.0539	5.2332E-14
PU241	241	8.5E-39	0	Pu241	0.000%	241.0567	2.0325E-46
PU242	242	78.64	0.0001	Pu242	0.007%	242.0587	1.8799E-06
AM241	241	2.7E-37	0	Am241	0.000%	241.0567	6.4261E-45
AM242M	242	0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243	6.5E-07	0	Am243	0.000%	243.0614	1.5505E-14
CM245	245	5.1E-36	0	Cm245	0.000%	245.0654	1.1976E-43
TOTAL	1440000	0.9998		1095072	100.00%		7.1967E-02

Number Density = (Weight %) * (Density) * (Na) / (Aw)
Avogadro's Number [Na] = 0.602252
Atomic Weight [Aw]

BURNUP:	21000			BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU				
ENRICHMEN	0.03			DECAY TIME:		1 YEARS		
DECAY TIM	1			Density	10.52			1
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw		Number Density
O 16	16	134600	0.078	O 16	12.093%	15.99492		4.7910E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055		1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048		2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172		1.2555E-07
EU151	151	0.1107	0	Eu151	0.000%	150.9198		4.1760E-09
EU153	153	64.85	0	Eu153	0.006%	152.9212		2.4144E-06
GD155	155	3.65	0	Gd155	0.000%	154.9227		1.3413E-07
U233	233	0.001053	0	U233	0.000%	233.0395		2.5725E-11
U234	234	194.4	0.0001	U234	0.017%	234.0409		4.7289E-06
U235	235	12560	0.0073	U235	1.128%	235.0439		3.0423E-04
U236	236	3056	0.0018	U236	0.275%	236.0456		7.3708E-05
U238	238	955000	0.5533	U238	85.803%	238.0508		2.2840E-02
NP237	237	257.2	0.0001	Np237	0.023%	237.0481		6.1772E-06
PU238	238	58.66	0	Pu238	0.005%	238.0495		1.4029E-06
PU239	239	4345	0.0025	Pu239	0.390%	239.0521		1.0348E-04
PU240	240	1354	0.0008	Pu240	0.122%	240.0539		3.2112E-05
PU241	241	861.1	0.0005	Pu241	0.077%	241.0567		2.0337E-05
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587		4.7487E-06
AM241	241	70.07	0	Am241	0.006%	241.0567		1.6549E-06
AM242M	242	1.115	0	Am242m	0.000%	242.0595		2.6225E-08
AM243	243	27.53	0	Am243	0.002%	243.0614		6.4484E-07
CM245	245	0.1343	0	Cm245	0.000%	245.0654		3.1200E-09
TOTAL	1725000	0.9996		1113016	100.00%			7.1325E-02

BURNUP:	21000			BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU				
ENRICHMEN	0.03			DECAY TIME:		2 YEARS		
DECAY TIM	2			Density	10.52			2
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw		Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949		4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055		1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048		2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172		1.2555E-07
EU151	151	0.2074	0	Eu151	0.000%	150.9198		7.8238E-09
EU153	153	64.89	0	Eu153	0.006%	152.9212		2.4158E-06
GD155	155	4.411	0	Gd155	0.000%	154.9227		1.6210E-07
U233	233	0.001144	0	U233	0.000%	233.0395		2.7948E-11
U234	234	194.9	0.0001	U234	0.018%	234.0409		4.7411E-06
U235	235	12560	0.0073	U235	1.128%	235.0439		3.0423E-04
U236	236	3056	0.0018	U236	0.275%	236.0456		7.3708E-05
U238	238	955000	0.5533	U238	85.803%	238.0508		2.2840E-02
NP237	237	257.3	0.0001	Np237	0.023%	237.0481		6.1796E-06
PU238	238	59.18	0	Pu238	0.005%	238.0495		1.4154E-06
PU239	239	4345	0.0025	Pu239	0.390%	239.0521		1.0348E-04
PU240	240	1354	0.0008	Pu240	0.122%	240.0539		3.2112E-05
PU241	241	820.6	0.0005	Pu241	0.074%	241.0567		1.9381E-05
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587		4.7487E-06
AM241	241	110.4	0.0001	Am241	0.010%	241.0567		2.6074E-06
AM242M	242	1.11	0	Am242m	0.000%	242.0595		2.6107E-08
AM243	243	27.53	0	Am243	0.002%	243.0614		6.4483E-07
CM245	245	0.1343	0	Cm245	0.000%	245.0654		3.1200E-09
TOTAL	1725000	0.9996		1113018	100.00%			7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 3 YEARS
DECAY TIM 3 Density 10.52 3

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	Number Density
O 16	16 134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103 313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109 43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149 3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151 0.3034	0	Eu151	0.000%	150.9198	1.1445E-08
EU153	153 64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155 5.064	0	Gd155	0.000%	154.9227	1.8610E-07
U233	233 0.001235	0	U233	0.000%	233.0395	3.0171E-11
U234	234 195.4	0.0001	U234	0.018%	234.0409	4.7532E-06
U235	235 12560	0.0073	U235	1.128%	235.0439	3.0423E-04
U236	236 3056	0.0018	U236	0.275%	236.0456	7.3708E-05
U238	238 955000	0.5533	U238	85.803%	238.0508	2.2840E-02
NP237	237 257.5	0.0001	Np237	0.023%	237.0481	6.1844E-06
PU238	238 58.93	0	Pu238	0.005%	238.0495	1.4094E-06
PU239	239 4345	0.0025	Pu239	0.390%	239.0521	1.0348E-04
PU240	240 1354	0.0008	Pu240	0.122%	240.0539	3.2112E-05
PU241	241 782.1	0.0005	Pu241	0.070%	241.0567	1.8471E-05
PU242	242 201.9	0.0001	Pu242	0.018%	242.0587	4.7487E-06
AM241	241 148.8	0.0001	Am241	0.013%	241.0567	3.5143E-06
AM242M	242 1.105	0	Am242m	0.000%	242.0595	2.5989E-08
AM243	243 27.52	0	Am243	0.002%	243.0614	6.4460E-07
CM245	245 0.1343	0	Cm245	0.000%	245.0654	3.1200E-09
TOTAL	1725000	0.9996	1113019	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 5 YEARS
DECAY TIM 5 Density 10.52 5

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	Number Density
O 16	16 134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103 313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109 43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149 3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151 0.4931	0	Eu151	0.000%	150.9198	1.8601E-08
EU153	153 64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155 6.118	0	Gd155	0.001%	154.9227	2.2483E-07
U233	233 0.001408	0	U233	0.000%	233.0395	3.4398E-11
U234	234 196.3	0.0001	U234	0.018%	234.0409	4.7751E-06
U235	235 12560	0.0073	U235	1.128%	235.0439	3.0423E-04
U236	236 3056	0.0018	U236	0.275%	236.0456	7.3708E-05
U238	238 955000	0.5533	U238	85.803%	238.0508	2.2840E-02
NP237	237 258.1	0.0001	Np237	0.023%	237.0481	6.1988E-06
PU238	238 58.06	0	Pu238	0.005%	238.0495	1.3886E-06
PU239	239 4344	0.0025	Pu239	0.390%	239.0521	1.0346E-04
PU240	240 1354	0.0008	Pu240	0.122%	240.0539	3.2112E-05
PU241	241 710.3	0.0004	Pu241	0.064%	241.0567	1.6776E-05
PU242	242 201.9	0.0001	Pu242	0.018%	242.0587	4.7487E-06
AM241	241 220	0.0001	Am241	0.020%	241.0567	5.1959E-06
AM242M	242 1.095	0	Am242m	0.000%	242.0595	2.5754E-08
AM243	243 27.52	0	Am243	0.002%	243.0614	6.4460E-07
CM245	245 0.1343	0	Cm245	0.000%	245.0654	3.1200E-09
TOTAL	1725000	0.9997	1113019	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 10 YEARS
DECAY TIM 10 Density 10.52 10

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	0.955	0	Eu151	0.000%	150.9198	3.6026E-08
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	7.745	0	Gd155	0.001%	154.9227	2.8462E-07
U233	233	0.001821	0	U233	0.000%	233.0395	4.4487E-11
U234	234	198.6	0.0001	U234	0.018%	234.0409	4.8311E-06
U235	235	12560	0.0073	U235	1.128%	235.0439	3.0423E-04
U236	236	3057	0.0018	U236	0.275%	236.0456	7.3732E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	260.5	0.0002	Np237	0.023%	237.0481	6.2564E-06
PU238	238	55.83	0	Pu238	0.005%	238.0495	1.3352E-06
PU239	239	4344	0.0025	Pu239	0.390%	239.0521	1.0346E-04
PU240	240	1354	0.0008	Pu240	0.122%	240.0539	3.2112E-05
PU241	241	558.3	0.0003	Pu241	0.050%	241.0567	1.3186E-05
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587	4.7487E-06
AM241	241	369.6	0.0002	Am241	0.033%	241.0567	8.7291E-06
AM242M	242	1.07	0	Am242m	0.000%	242.0595	2.5166E-08
AM243	243	27.5	0	Am243	0.002%	243.0614	6.4413E-07
CM245	245	0.1343	0	Cm245	0.000%	245.0654	3.1200E-09
TOTAL	1725000	0.9997		1113022	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 15 YEARS
DECAY TIM 15 Density 10.52 15

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	1.399	0	Eu151	0.000%	150.9198	5.2775E-08
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	8.549	0	Gd155	0.001%	154.9227	3.1416E-07
U233	233	0.002238	0	U233	0.000%	233.0395	5.4675E-11
U234	234	200.8	0.0001	U234	0.018%	234.0409	4.8846E-06
U235	235	12560	0.0073	U235	1.128%	235.0439	3.0423E-04
U236	236	3058	0.0018	U236	0.275%	236.0456	7.3756E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	263.9	0.0002	Np237	0.024%	237.0481	6.3381E-06
PU238	238	53.7	0	Pu238	0.005%	238.0495	1.2843E-06
PU239	239	4343	0.0025	Pu239	0.390%	239.0521	1.0343E-04
PU240	240	1354	0.0008	Pu240	0.122%	240.0539	3.2112E-05
PU241	241	438.9	0.0003	Pu241	0.039%	241.0567	1.0366E-05
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587	4.7487E-06
AM241	241	485.5	0.0003	Am241	0.044%	241.0567	1.1466E-05
AM242M	242	1.046	0	Am242m	0.000%	242.0595	2.4602E-08
AM243	243	27.49	0	Am243	0.002%	243.0614	6.4389E-07
CM245	245	0.1342	0	Cm245	0.000%	245.0654	3.1176E-09
TOTAL	1725000	0.9996		1113023	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 20 YEARS
DECAY TIM 20 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	20 Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	1.826	0	Eu151	0.000%	150.9198	6.8883E-08
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	8.947	0	Gd155	0.001%	154.9227	3.2879E-07
U233	233	0.002661	0	U233	0.000%	233.0395	6.5009E-11
U234	234	202.9	0.0001	U234	0.018%	234.0409	4.9357E-06
U235	235	12560	0.0073	U235	1.128%	235.0439	3.0423E-04
U236	236	3059	0.0018	U236	0.275%	236.0456	7.3780E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	268.1	0.0002	Np237	0.024%	237.0481	6.4390E-06
PU238	238	51.64	0	Pu238	0.005%	238.0495	1.2350E-06
PU239	239	4342	0.0025	Pu239	0.390%	239.0521	1.0341E-04
PU240	240	1354	0.0008	Pu240	0.122%	240.0539	3.2112E-05
PU241	241	345	0.0002	Pu241	0.031%	241.0567	8.1481E-06
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587	4.7487E-06
AM241	241	575.2	0.0003	Am241	0.052%	241.0567	1.3585E-05
AM242M	242	1.022	0	Am242m	0.000%	242.0595	2.4037E-08
AM243	243	27.48	0	Am243	0.002%	243.0614	6.4366E-07
CM245	245	0.1341	0	Cm245	0.000%	245.0654	3.1153E-09
TOTAL	1725000	0.9997		1113024	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 30 YEARS
DECAY TIM 30 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	30 Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2536E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	2.634	0	Eu151	0.000%	150.9198	9.9363E-08
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	9.243	0	Gd155	0.001%	154.9227	3.3967E-07
U233	233	0.003531	0	U233	0.000%	233.0395	8.6263E-11
U234	234	206.8	0.0001	U234	0.019%	234.0409	5.0305E-06
U235	235	12560	0.0073	U235	1.128%	235.0439	3.0423E-04
U236	236	3060	0.0018	U236	0.275%	236.0456	7.3804E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	278.2	0.0002	Np237	0.025%	237.0481	6.6815E-06
PU238	238	47.75	0	Pu238	0.004%	238.0495	1.1420E-06
PU239	239	4341	0.0025	Pu239	0.390%	239.0521	1.0338E-04
PU240	240	1354	0.0008	Pu240	0.122%	240.0539	3.2112E-05
PU241	241	213.2	0.0001	Pu241	0.019%	241.0567	5.0353E-06
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587	4.7487E-06
AM241	241	696.7	0.0004	Am241	0.063%	241.0567	1.6454E-05
AM242M	242	0.9767	0	Am242m	0.000%	242.0595	2.2972E-08
AM243	243	27.45	0	Am243	0.002%	243.0614	6.4296E-07
CM245	245	0.134	0	Cm245	0.000%	245.0654	3.1130E-09
TOTAL	1725000	0.9997		1113025	100.00%		7.1325E-02

BURNUP:	21000			BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU			
ENRICHMEN	0.03			DECAY TIME:	50 YEARS		
DECAY TIM	50			Density	10.52		50
							Number
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	4.074	0	Eu151	0.000%	150.9198	1.5368E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	9.335	0	Gd155	0.001%	154.9227	3.4305E-07
U233	233	0.005377	0	U233	0.000%	233.0395	1.3136E-10
U234	234	213.9	0.0001	U234	0.019%	234.0409	5.2032E-06
U235	235	12560	0.0073	U235	1.128%	235.0439	3.0423E-04
U236	236	3062	0.0018	U236	0.275%	236.0456	7.3852E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	302.4	0.0002	Np237	0.027%	237.0481	7.2627E-06
PU238	238	40.83	0	Pu238	0.004%	238.0495	9.7649E-07
PU239	239	4339	0.0025	Pu239	0.390%	239.0521	1.0334E-04
PU240	240	1352	0.0008	Pu240	0.121%	240.0539	3.2064E-05
PU241	241	81.4	0	Pu241	0.007%	241.0567	1.9225E-06
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587	4.7487E-06
AM241	241	804.1	0.0005	Am241	0.072%	241.0567	1.8991E-05
AM242M	242	0.8919	0	Am242m	0.000%	242.0595	2.0977E-08
AM243	243	27.4	0	Am243	0.002%	243.0614	6.4179E-07
CM245	245	0.1338	0	Cm245	0.000%	245.0654	3.1083E-09
TOTAL	1725000	0.9997		1113024	100.00%		7.1325E-02

BURNUP:	21000			BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU			
ENRICHMEN	0.03			DECAY TIME:	100 YEARS		
DECAY TIM	100			Density	10.52		100
							Number
ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2536E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	6.836	0	Eu151	0.001%	150.9198	2.5787E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4330E-07
U233	233	0.01071	0	U233	0.000%	233.0395	2.6165E-10
U234	234	227.3	0.0001	U234	0.020%	234.0409	5.5292E-06
U235	235	12570	0.0073	U235	1.129%	235.0439	3.0447E-04
U236	236	3069	0.0018	U236	0.276%	236.0456	7.4021E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	367.4	0.0002	Np237	0.033%	237.0481	8.8238E-06
PU238	238	27.63	0	Pu238	0.002%	238.0495	6.6079E-07
PU239	239	4333	0.0025	Pu239	0.389%	239.0521	1.0319E-04
PU240	240	1345	0.0008	Pu240	0.121%	240.0539	3.1898E-05
PU241	241	7.334	0	Pu241	0.001%	241.0567	1.7321E-07
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587	4.7486E-06
AM241	241	812.2	0.0005	Am241	0.073%	241.0567	1.9182E-05
AM242M	242	0.71	0	Am242m	0.000%	242.0595	1.6699E-08
AM243	243	27.27	0	Am243	0.002%	243.0614	6.3874E-07
CM245	245	0.1333	0	Cm245	0.000%	245.0654	3.0967E-09
TOTAL	1725000	0.9997		1113030	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 200 YEARS
DECAY TIM 200 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	200 Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2536E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	9.996	0	Eu151	0.001%	150.9198	3.7708E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4330E-07
U233	233	0.02435	0	U233	0.000%	233.0395	5.9487E-10
U234	234	242.5	0.0001	U234	0.022%	234.0409	5.8989E-06
U235	235	12580	0.0073	U235	1.130%	235.0439	3.0471E-04
U236	236	3083	0.0018	U236	0.277%	236.0456	7.4359E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	486.9	0.0003	Np237	0.044%	237.0481	1.1694E-05
PU238	238	12.68	0	Pu238	0.001%	238.0495	3.0325E-07
PU239	239	4320	0.0025	Pu239	0.388%	239.0521	1.0288E-04
PU240	240	1331	0.0008	Pu240	0.120%	240.0539	3.1566E-05
PU241	241	0.05977	0	Pu241	0.000%	241.0567	1.4116E-09
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587	4.7486E-06
AM241	241	698.3	0.0004	Am241	0.063%	241.0567	1.6492E-05
AM242M	242	0.45	0	Am242m	0.000%	242.0595	1.0584E-08
AM243	243	27.02	0	Am243	0.002%	243.0614	6.3288E-07
CM245	245	0.1322	0	Cm245	0.000%	245.0654	3.0712E-09
TOTAL	1725000	0.9997		1113028	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 300 YEARS
DECAY TIM 300 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	300 Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2536E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	11.46	0	Eu151	0.001%	150.9198	4.3231E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4330E-07
U233	233	0.0415	0	U233	0.000%	233.0395	1.0138E-09
U234	234	249.5	0.0001	U234	0.022%	234.0409	6.0692E-06
U235	235	12590	0.0073	U235	1.131%	235.0439	3.0495E-04
U236	236	3097	0.0018	U236	0.278%	236.0456	7.4697E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	588.7	0.0003	Np237	0.053%	237.0481	1.4139E-05
PU238	238	5.846	0	Pu238	0.001%	238.0495	1.3981E-07
PU239	239	4308	0.0025	Pu239	0.387%	239.0521	1.0260E-04
PU240	240	1316	0.0008	Pu240	0.118%	240.0539	3.1211E-05
PU241	241	0.000717	0	Pu241	0.000%	241.0567	1.6924E-11
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587	4.7487E-06
AM241	241	594.9	0.0003	Am241	0.053%	241.0567	1.4050E-05
AM242M	242	0.2852	0	Am242m	0.000%	242.0595	6.7078E-09
AM243	243	26.76	0	Am243	0.002%	243.0614	6.2679E-07
CM245	245	0.1311	0	Cm245	0.000%	245.0654	3.0456E-09
TOTAL	1725000	0.9997		1113025	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 500 YEARS
DECAY TIM 500 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	500 Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2536E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	12.45	0	Eu151	0.001%	150.9198	4.6965E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4330E-07
U233	233	0.08434	0	U233	0.000%	233.0395	2.0604E-09
U234	234	254.1	0.0001	U234	0.023%	234.0409	6.1811E-06
U235	235	12620	0.0073	U235	1.134%	235.0439	3.0568E-04
U236	236	3124	0.0018	U236	0.281%	236.0456	7.5348E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	749.3	0.0004	Np237	0.067%	237.0481	1.7996E-05
PU238	238	1.266	0	Pu238	0.000%	238.0495	3.0278E-08
PU239	239	4283	0.0025	Pu239	0.385%	239.0521	1.0200E-04
PU240	240	1289	0.0007	Pu240	0.116%	240.0539	3.0570E-05
PU241	241	0.000215	0	Pu241	0.000%	241.0567	5.0872E-12
PU242	242	201.9	0.0001	Pu242	0.018%	242.0587	4.7486E-06
AM241	241	431.6	0.0003	Am241	0.039%	241.0567	1.0193E-05
AM242M	242	0.1146	0	Am242m	0.000%	242.0595	2.6954E-09
AM243	243	26.27	0	Am243	0.002%	243.0614	6.1532E-07
CM245	245	0.129	0	Cm245	0.000%	245.0654	2.9968E-09
TOTAL	1725000	0.9997		1113028	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 1000 YEARS
DECAY TIM 1000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	1000 Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	12.71	0	Eu151	0.001%	150.9198	4.7946E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4331E-07
U233	233	0.2244	0	U233	0.000%	233.0395	5.4821E-09
U234	234	255.1	0.0001	U234	0.023%	234.0409	6.2055E-06
U235	235	12680	0.0073	U235	1.139%	235.0439	3.0713E-04
U236	236	3190	0.0018	U236	0.287%	236.0456	7.6940E-05
U238	238	955000	0.5533	U238	85.802%	238.0508	2.2840E-02
NP237	237	983.3	0.0006	Np237	0.088%	237.0481	2.3616E-05
PU238	238	0.03497	0	Pu238	0.000%	238.0495	8.3634E-10
PU239	239	4224	0.0024	Pu239	0.380%	239.0521	1.0060E-04
PU240	240	1223	0.0007	Pu240	0.110%	240.0539	2.9005E-05
PU241	241	0.000207	0	Pu241	0.000%	241.0567	4.8818E-12
PU242	242	201.8	0.0001	Pu242	0.018%	242.0587	4.7463E-06
AM241	241	193.6	0.0001	Am241	0.017%	241.0567	4.5724E-06
AM242M	242	0.01172	0	Am242m	0.000%	242.0595	2.7565E-10
AM243	243	25.06	0	Am243	0.002%	243.0614	5.8698E-07
CM245	245	0.1238	0	Cm245	0.000%	245.0654	2.8760E-09
TOTAL	1725000	0.9997		1113023	100.00%		7.1325E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 2000 YEARS
DECAY TIM 2000 Density 10.52

ISOTOPE		GRAMS/MTIHM	%TOTAL	Element	%	Aw	2000 Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7909E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	12.71	0	Eu151	0.001%	150.9198	4.7947E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4331E-07
U233	233	0.5663	0	U233	0.000%	233.0395	1.3835E-08
U234	234	254.5	0.0001	U234	0.023%	234.0409	6.1909E-06
U235	235	12800	0.0074	U235	1.150%	235.0439	3.1004E-04
U236	236	3310	0.0019	U236	0.297%	236.0456	7.9834E-05
U238	238	955000	0.5533	U238	85.803%	238.0508	2.2840E-02
NP237	237	1135	0.0007	Np237	0.102%	237.0481	2.7260E-05
PU238	238	0.000071	0	Pu238	0.000%	238.0495	1.6887E-12
PU239	239	4106	0.0024	Pu239	0.369%	239.0521	9.7788E-05
PU240	240	1100	0.0006	Pu240	0.099%	240.0539	2.6088E-05
PU241	241	0.000191	0	Pu241	0.000%	241.0567	4.5015E-12
PU242	242	201.4	0.0001	Pu242	0.018%	242.0587	4.7369E-06
AM241	241	38.95	0	Am241	0.003%	241.0567	9.1991E-07
AM242M	242	0.000123	0	Am242m	0.000%	242.0595	2.8835E-12
AM243	243	22.82	0	Am243	0.002%	243.0614	5.3451E-07
CM245	245	0.1141	0	Cm245	0.000%	245.0654	2.6507E-09
TOTAL	1725000	0.9997		1113017	100.00%		7.1326E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 5000 YEARS
DECAY TIM 5000 Density 10.52

ISOTOPE		GRAMS/MTIHM	%TOTAL	Element	%	Aw	5000 Number Density
O 16	16	134600	0.078	O 16	12.093%	15.9949	4.7910E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	12.71	0	Eu151	0.001%	150.9198	4.7947E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4331E-07
U233	233	1.664	0	U233	0.000%	233.0395	4.0653E-08
U234	234	252.9	0.0001	U234	0.023%	234.0409	6.1521E-06
U235	235	13130	0.0076	U235	1.180%	235.0439	3.1804E-04
U236	236	3605	0.0021	U236	0.324%	236.0456	8.6951E-05
U238	238	955000	0.5533	U238	85.804%	238.0508	2.2840E-02
NP237	237	1172	0.0007	Np237	0.105%	237.0481	2.8149E-05
PU238	238	1.6E-10	0	Pu238	0.000%	238.0495	3.7429E-18
PU239	239	3771	0.0022	Pu239	0.339%	239.0521	8.9811E-05
PU240	240	800	0.0005	Pu240	0.072%	240.0539	1.8973E-05
PU241	241	0.000149	0	Pu241	0.000%	241.0567	3.5238E-12
PU242	242	200.3	0.0001	Pu242	0.018%	242.0587	4.7111E-06
AM241	241	0.3221	0	Am241	0.000%	241.0567	7.6074E-09
AM242M	242	1.4E-10	0	Am242m	0.000%	242.0595	3.3046E-18
AM243	243	17.22	0	Am243	0.002%	243.0614	4.0335E-07
CM245	245	0.08936	0	Cm245	0.000%	245.0654	2.0760E-09
TOTAL	1725000	0.9997		1112998	100.00%		7.1327E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 10000 YEARS
DECAY TIM 10000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	10000 Number Density
O 16	16	134600	0.078	O 16	12.094%	15.9949	4.7911E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151	12.71	0	Eu151	0.001%	150.9198	4.7948E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4167E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4332E-07
U233	233	3.473	0	U233	0.000%	233.0395	8.4849E-08
U234	234	250	0.0001	U234	0.022%	234.0409	6.0816E-06
U235	235	13630	0.0079	U235	1.225%	235.0439	3.3016E-04
U236	236	3928	0.0023	U236	0.353%	236.0456	9.4743E-05
U238	238	955000	0.5533	U238	85.806%	238.0508	2.2841E-02
NP237	237	1170	0.0007	Np237	0.105%	237.0481	2.8101E-05
PU238	238	2.0E-20	0	Pu238	0.000%	238.0495	4.6949E-28
PU239	239	3272	0.0019	Pu239	0.294%	239.0521	7.7928E-05
PU240	240	470.8	0.0003	Pu240	0.042%	240.0539	1.1166E-05
PU241	241	0.000099	0	Pu241	0.000%	241.0567	2.3444E-12
PU242	242	198.5	0.0001	Pu242	0.018%	242.0587	4.6689E-06
AM241	241	0.003099	0	Am241	0.000%	241.0567	7.3194E-11
AM242M	242	1.8E-20	0	Am242m	0.000%	242.0595	4.1396E-28
AM243	243	10.77	0	Am243	0.001%	243.0614	2.5227E-07
CM245	245	0.05945	0	Cm245	0.000%	245.0654	1.3812E-09
TOTAL	1725000	0.9997		1112981	100.00%		7.1328E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 20000 YEARS
DECAY TIM 20000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	20000 Number Density
O 16	16	134600	0.078	O 16	12.094%	15.9949	4.7912E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7362E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2538E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2556E-07
EU151	151	12.71	0	Eu151	0.001%	150.9198	4.7950E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4167E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4333E-07
U233	233	6.967	0	U233	0.001%	233.0395	1.7022E-07
U234	234	244.5	0.0001	U234	0.022%	234.0409	5.9480E-06
U235	235	14430	0.0084	U235	1.297%	235.0439	3.4954E-04
U236	236	4230	0.0025	U236	0.380%	236.0456	1.0203E-04
U238	238	955000	0.5533	U238	85.808%	238.0508	2.2841E-02
NP237	237	1167	0.0007	Np237	0.105%	237.0481	2.8030E-05
PU238	238	3.1E-40	0	Pu238	0.000%	238.0495	7.3786E-48
PU239	239	2459	0.0014	Pu239	0.221%	239.0521	5.8567E-05
PU240	240	163.1	0.0001	Pu240	0.015%	240.0539	3.8684E-06
PU241	241	0.000044	0	Pu241	0.000%	241.0567	1.0369E-12
PU242	242	195	0.0001	Pu242	0.018%	242.0587	4.5867E-06
AM241	241	0.001318	0	Am241	0.000%	241.0567	3.1130E-11
AM242M	242	2.8E-40	0	Am242m	0.000%	242.0595	6.5107E-48
AM243	243	4.208	0	Am243	0.000%	243.0614	9.8570E-08
CM245	245	0.0263	0	Cm245	0.000%	245.0654	6.1103E-10
TOTAL	1725000	0.9997		1112947	100.00%		7.1330E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 50000 YEARS
DECAY TIM 50000 Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	50000 Number Density
O 16	16 134600	0.078	O 16	12.093%	15.9949	4.7910E-02
RH103	103 313.8	0.0002	Rh103	0.028%	102.9055	1.7361E-05
AG109	109 43.11	0	Ag109	0.004%	108.9048	2.2537E-06
SM149	149 3.284	0	Sm149	0.000%	148.9172	1.2555E-07
EU151	151 12.71	0	Eu151	0.001%	150.9198	4.7947E-07
EU153	153 64.91	0	Eu153	0.006%	152.9212	2.4166E-06
GD155	155 9.342	0	Gd155	0.001%	154.9227	3.4331E-07
U233	233 16.5	0	U233	0.001%	233.0395	4.0311E-07
U234	234 228.8	0.0001	U234	0.021%	234.0409	5.5658E-06
U235	235 15840	0.0092	U235	1.423%	235.0439	3.8368E-04
U236	236 4380	0.0025	U236	0.394%	236.0456	1.0564E-04
U238	238 955100	0.5534	U238	85.813%	238.0508	2.2843E-02
NP237	237 1155	0.0007	Np237	0.104%	237.0481	2.7740E-05
PU238	238 0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239 1038	0.0006	Pu239	0.093%	239.0521	2.4721E-05
PU240	240 6.775	0	Pu240	0.001%	240.0539	1.6068E-07
PU241	241 3.8E-06	0	Pu241	0.000%	241.0567	8.9773E-14
PU242	242 184.8	0.0001	Pu242	0.017%	242.0587	4.3466E-06
AM241	241 0.000114	0	Am241	0.000%	241.0567	2.6948E-12
AM242M	242 0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243 0.2514	0	Am243	0.000%	243.0614	5.8886E-09
CM245	245 0.002277	0	Cm245	0.000%	245.0654	5.2899E-11
TOTAL	1726000	0.9997	1112997	100.00%		7.1328E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 100000 YEARS
DECAY TIM 100000 Density 10.52

ISOTOPE	GRAMS/MTIHM	%TOTAL	Element	%	Aw	100000 Number Density
O 16	16 134600	0.078	O 16	12.094%	15.9949	4.7913E-02
RH103	103 313.8	0.0002	Rh103	0.028%	102.9055	1.7362E-05
AG109	109 43.11	0	Ag109	0.004%	108.9048	2.2538E-06
SM149	149 3.284	0	Sm149	0.000%	148.9172	1.2556E-07
EU151	151 12.71	0	Eu151	0.001%	150.9198	4.7950E-07
EU153	153 64.91	0	Eu153	0.006%	152.9212	2.4168E-06
GD155	155 9.342	0	Gd155	0.001%	154.9227	3.4333E-07
U233	233 29.65	0	U233	0.003%	233.0395	7.2441E-07
U234	234 205.4	0.0001	U234	0.018%	234.0409	4.9969E-06
U235	235 16620	0.0096	U235	1.493%	235.0439	4.0260E-04
U236	236 4380	0.0025	U236	0.394%	236.0456	1.0565E-04
U238	238 955100	0.5534	U238	85.818%	238.0508	2.2844E-02
NP237	237 1137	0.0007	Np237	0.102%	237.0481	2.7310E-05
PU238	238 0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239 246	0.0001	Pu239	0.022%	239.0521	5.8591E-06
PU240	240 0.03376	0	Pu240	0.000%	240.0539	8.0073E-10
PU241	241 6.4E-08	0	Pu241	0.000%	241.0567	1.5209E-15
PU242	242 169	0.0001	Pu242	0.015%	242.0587	3.9752E-06
AM241	241 1.9E-06	0	Am241	0.000%	241.0567	4.5657E-14
AM242M	242 0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243 0.002295	0	Am243	0.000%	243.0614	5.3760E-11
CM245	245 0.000039	0	Cm245	0.000%	245.0654	8.9610E-13
TOTAL	1726000	0.9997	1112934	100.00%		7.1331E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 200000 YEARS
DECAY TIM 200000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	200000 Number Density
O 16	16	134600	0.078	O 16	12.095%	15.9949	4.7918E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7364E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2541E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2557E-07
EU151	151	12.71	0	Eu151	0.001%	150.9198	4.7955E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4170E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4337E-07
U233	233	47.98	0	U233	0.004%	233.0395	1.1724E-06
U234	234	167.4	0.0001	U234	0.015%	234.0409	4.0728E-06
U235	235	16840	0.0098	U235	1.513%	235.0439	4.0797E-04
U236	236	4368	0.0025	U236	0.393%	236.0456	1.0537E-04
U238	238	955100	0.5534	U238	85.826%	238.0508	2.2846E-02
NP237	237	1101	0.0006	Np237	0.099%	237.0481	2.6447E-05
PU238	238	0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239	13.8	0	Pu239	0.001%	239.0521	3.2871E-07
PU240	240	1.2E-06	0	Pu240	0.000%	240.0539	2.8631E-14
PU241	241	1.8E-11	0	Pu241	0.000%	241.0567	4.3653E-19
PU242	242	141.2	0.0001	Pu242	0.013%	242.0587	3.3216E-06
AM241	241	5.8E-10	0	Am241	0.000%	241.0567	1.3807E-17
AM242M	242	0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243	2.2E-07	0	Am243	0.000%	243.0614	5.0673E-15
CM245	245	1.1E-08	0	Cm245	0.000%	245.0654	2.5722E-16
TOTAL	1726000	0.9997		1112827	100.00%		7.1335E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 500000 YEARS
DECAY TIM 500000 Density 10.52

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	500000 Number Density
O 16	16	134600	0.078	O 16	12.098%	15.9949	4.7928E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7368E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2546E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2560E-07
EU151	151	12.71	0	Eu151	0.001%	150.9198	4.7966E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4175E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4344E-07
U233	233	68.15	0	U233	0.006%	233.0395	1.6656E-06
U234	234	101.1	0.0001	U234	0.009%	234.0409	2.4603E-06
U235	235	16850	0.0098	U235	1.515%	235.0439	4.0830E-04
U236	236	4329	0.0025	U236	0.389%	236.0456	1.0445E-04
U238	238	955100	0.5534	U238	85.846%	238.0508	2.2851E-02
NP237	237	998.5	0.0006	Np237	0.090%	237.0481	2.3991E-05
PU238	238	0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239	0.002439	0	Pu239	0.000%	239.0521	5.8110E-11
PU240	240	3.6E-07	0	Pu240	0.000%	240.0539	8.4772E-15
PU241	241	4.4E-22	0	Pu241	0.000%	241.0567	1.0327E-29
PU242	242	82.53	0	Pu242	0.007%	242.0587	1.9419E-06
AM241	241	1.4E-20	0	Am241	0.000%	241.0567	3.2653E-28
AM242M	242	0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243	2.3E-08	0	Am243	0.000%	243.0614	5.3402E-16
CM245	245	2.6E-19	0	Cm245	0.000%	245.0654	6.0867E-27
TOTAL	1726000	0.9997		1112576	100.00%		7.1345E-02

BURNUP: 21000 BWR, 3.00% Enriched, Burnup 21.000 GWd/MTU
ENRICHMEN 0.03 DECAY TIME: 1000000 YEARS
DECAY TIM 1000000 Density 10.52 1000000

ISOTOPE	GRAMS/MTIHM		%TOTAL	Element	%	Aw	Number Density
O 16	16	134600	0.078	O 16	12.101%	15.9949	4.7942E-02
RH103	103	313.8	0.0002	Rh103	0.028%	102.9055	1.7373E-05
AG109	109	43.11	0	Ag109	0.004%	108.9048	2.2552E-06
SM149	149	3.284	0	Sm149	0.000%	148.9172	1.2563E-07
EU151	151	12.71	0	Eu151	0.001%	150.9198	4.7979E-07
EU153	153	64.91	0	Eu153	0.006%	152.9212	2.4182E-06
GD155	155	9.342	0	Gd155	0.001%	154.9227	3.4354E-07
U233	233	65.64	0	U233	0.006%	233.0395	1.6047E-06
U234	234	63.46	0	U234	0.006%	234.0409	1.5448E-06
U235	235	16840	0.0098	U235	1.514%	235.0439	4.0817E-04
U236	236	4265	0.0025	U236	0.383%	236.0456	1.0294E-04
U238	238	955100	0.5534	U238	85.870%	238.0508	2.2858E-02
NP237	237	849.5	0.0005	Np237	0.076%	237.0481	2.0416E-05
PU238	238	0	0	Pu238	0.000%	238.0495	0.0000E+00
PU239	239	7.4E-08	0	Pu239	0.000%	239.0521	1.7524E-15
PU240	240	3.6E-07	0	Pu240	0.000%	240.0539	8.4464E-15
PU241	241	8.5E-40	0	Pu241	0.000%	241.0567	2.0131E-47
PU242	242	33.69	0	Pu242	0.003%	242.0587	7.9293E-07
AM241	241	2.7E-38	0	Am241	0.000%	241.0567	6.3669E-46
AM242M	242	0	0	Am242m	0.000%	242.0595	0.0000E+00
AM243	243	2.2E-08	0	Am243	0.000%	243.0614	5.2245E-16
CM245	245	5.1E-37	0	Cm245	0.000%	245.0654	1.1863E-44
TOTAL	1726000	0.9997		1112264	100.00%		7.1358E-02

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 1 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	5.211E-02	0.00%
HE 3	1.401E-03	0.00%
HE 4	1.490E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.728E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.351E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.862E-11	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 35	3.373E-05	0.00%
S 36	3.858E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	8.859E-07	0.00%
AR 37	2.798E-09	0.00%
AR 38	7.744E-04	0.00%
AR 39	9.707E-07	0.00%
K 40	2.755E-04	0.00%
K 41	5.252E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.720E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 45	4.560E-06	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	5.618E-05	0.00%
SC 46	2.701E-06	0.00%
TI 46	8.781E+00	0.00%

TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 51	2.277E-05	0.00%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	1.835E-02	0.00%
MN 55	7.105E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	7.116E-01	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.154E+01	0.01%
FE 59	1.470E-05	0.00%
CO 58	4.107E-03	0.00%
CO 59	8.758E+01	0.01%
CO 60	4.477E+00	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.205E+01	0.00%
NI 60	2.885E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	4.334E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.317E+01	0.00%
CU 65	6.187E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	4.142E-03	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.636E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	7.947E-05	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.595E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	1.489E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	6.397E+01	0.00%
RB 86	1.620E-08	0.00%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 89	2.066E-01	0.00%
SR 90	3.463E+02	0.02%
Y 89	2.997E+02	0.02%

Y 90	8.684E-02	0.00%
Y 91	6.227E-01	0.00%
ZR 90	1.276E+05	8.86%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.266E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 95	1.380E+00	0.00%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	4.264E-04	0.00%
NB 94	3.211E+00	0.00%
NB 95	1.704E+00	0.00%
NB 95M	5.772E-04	0.00%
MO 92	5.706E+01	0.00%
MO 93	1.001E-02	0.00%
MO 94	3.663E+01	0.00%
MO 95	5.525E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.940E+02	0.03%
RU 99	3.099E-03	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU103	6.426E-02	0.00%
RU104	2.922E+02	0.02%
RU106	4.804E+01	0.00%
RH102	2.062E-04	0.00%
RH103	3.080E+02	0.02%
RH103M	5.748E-05	0.00%
RH106	4.516E-05	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.228E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.716E-02	0.00%
AG108	8.875E-13	0.00%
AG108M	2.811E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	2.221E-10	0.00%
AG110	1.577E-09	0.00%
AG110M	1.041E-01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	2.247E-04	0.00%
CD110	1.264E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.418E-01	0.00%
CD113M	1.177E-01	0.00%
CD114	2.194E+01	0.00%
CD115M	1.957E-04	0.00%
CD116	6.426E+00	0.00%
IN113	4.297E-01	0.00%
IN113M	4.672E-06	0.00%
IN114	2.745E-10	0.00%
IN114M	1.707E-05	0.00%
IN115	2.239E+00	0.00%
IN115M	5.440E-11	0.00%
SN112	3.841E+01	0.00%
SN113	7.780E-03	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%

SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN117M	1.062E-09	0.00%
SN118	9.954E+02	0.07%
SN119	3.625E+02	0.03%
SN119M	3.798E-01	0.00%
SN120	1.352E+03	0.09%
SN121M	7.672E-03	0.00%
SN122	1.994E+02	0.01%
SN123	5.439E-02	0.00%
SN124	2.462E+02	0.02%
SN126	1.523E+01	0.00%
SB121	5.767E+00	0.00%
SB123	5.815E+00	0.00%
SB124	5.197E-04	0.00%
SB125	7.400E+00	0.00%
SB126	7.234E-07	0.00%
SB126M	5.499E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.250E-03	0.00%
TE123M	5.363E-05	0.00%
TE124	1.328E-01	0.00%
TE125	4.167E+00	0.00%
TE125M	1.032E-01	0.00%
TE126	3.811E-01	0.00%
TE127	4.242E-04	0.00%
TE127M	1.212E-01	0.00%
TE128	6.303E+01	0.00%
TE129	6.817E-07	0.00%
TE129M	7.281E-04	0.00%
TE130	2.067E+02	0.01%
I127	3.121E+01	0.00%
I129	1.053E+02	0.01%
XE127	3.450E-10	0.00%
XE128	9.462E-01	0.00%
XE129	3.032E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE131M	2.092E-10	0.00%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	3.520E+01	0.00%
CS135	2.072E+02	0.01%
CS136	1.744E-09	0.00%
CS137	7.123E+02	0.05%
BA132	4.753E-04	0.00%
BA134	2.430E+01	0.00%
BA135	3.938E-02	0.00%
BA136	7.951E+00	0.00%
BA136M	7.821E-17	0.00%
BA137	3.252E+01	0.00%
BA137M	1.089E-04	0.00%
BA138	7.843E+02	0.05%
BA140	5.395E-08	0.00%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
LA140	8.137E-09	0.00%
CE140	7.514E+02	0.05%
CE141	2.195E-02	0.00%
CE142	6.952E+02	0.05%
CE144	1.234E+02	0.01%
PR141	6.933E+02	0.05%
PR143	1.780E-07	0.00%
PR144	5.212E-03	0.00%
PR144M	2.605E-05	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%

ND144	6.204E+02	0.04%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND147	8.341E-10	0.00%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	2.140E-03	0.00%
PM147	1.032E+02	0.01%
PM148	1.784E-05	0.00%
PM148M	2.436E-03	0.00%
SM146	1.338E-03	0.00%
SM147	6.785E+01	0.00%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	1.158E+01	0.00%
SM152	8.554E+01	0.01%
SM154	1.960E+01	0.00%
EU150	9.136E-08	0.00%
EU151	9.884E-02	0.00%
EU152	3.148E-02	0.00%
EU153	5.907E+01	0.00%
EU154	1.121E+01	0.00%
EU155	4.706E+00	0.00%
EU156	8.105E-08	0.00%
GD152	2.662E-02	0.00%
GD153	4.934E-04	0.00%
GD154	1.508E+00	0.00%
GD155	7.426E-01	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
TB160	9.904E-04	0.00%
DY160	8.626E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.470E-04	0.00%
ER166	1.270E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM170	1.078E-07	0.00%
TM171	2.619E-08	0.00%
LU175	1.165E-02	0.00%
LU176	2.364E-04	0.00%
LU177	8.747E-10	0.00%
LU177M	8.787E-08	0.00%
HF174	1.800E-02	0.00%
HF175	5.056E-05	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF181	5.842E-05	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	3.263E-04	0.00%
W180	8.644E-03	0.00%
W181	2.048E-05	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W185	9.472E-05	0.00%

W186	1.724E+00	0.00%
W188	3.887E-06	0.00%
RE185	1.155E-02	0.00%
RE187	3.464E-01	0.00%
RE188	4.004E-08	0.00%
OS186	2.828E-03	0.00%
OS187	8.483E-12	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	6.575E-10	0.00%
TL206	4.315E-17	0.00%
TL207	2.099E-15	0.00%
TL208	1.511E-12	0.00%
TL209	1.156E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.261E-01	0.00%
PB209	4.816E-15	0.00%
PB210	1.129E-11	0.00%
PB211	1.624E-14	0.00%
PB212	8.914E-10	0.00%
PB214	6.222E-16	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%
BI210	6.949E-15	0.00%
BI210M	1.663E-05	0.00%
BI211	9.580E-16	0.00%
BI212	8.455E-11	0.00%
BI213	1.132E-15	0.00%
BI214	4.620E-16	0.00%
PO210	1.151E-06	0.00%
PO211	1.175E-20	0.00%
PO212	4.474E-21	0.00%
PO213	1.698E-24	0.00%
PO214	6.356E-23	0.00%
PO215	1.360E-20	0.00%
PO216	3.557E-15	0.00%
PO218	7.215E-17	0.00%
AT217	1.360E-20	0.00%
RN219	3.081E-17	0.00%
RN220	1.343E-12	0.00%
RN222	1.326E-13	0.00%
FR221	1.234E-16	0.00%
FR223	1.429E-16	0.00%
RA223	7.826E-12	0.00%
RA224	7.776E-09	0.00%
RA225	5.582E-13	0.00%
RA226	2.064E-08	0.00%
RA228	8.638E-15	0.00%
AC225	3.771E-13	0.00%
AC227	5.537E-09	0.00%
AC228	9.016E-19	0.00%
TH227	1.286E-11	0.00%
TH228	1.509E-06	0.00%
TH229	1.029E-07	0.00%
TH230	1.578E-03	0.00%
TH231	5.295E-08	0.00%
TH232	1.747E-04	0.00%
TH234	1.388E-05	0.00%
PA231	1.792E-04	0.00%
PA233	7.708E-06	0.00%
PA234	2.090E-10	0.00%
PA234M	4.680E-10	0.00%
U232	1.722E-04	0.00%
U233	1.026E-03	0.00%
U234	2.004E+02	0.01%

U235	1.302E+04	0.90%
U236	2.926E+03	0.20%
U237	2.317E-05	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	6.784E-07	0.00%
NP236	1.248E-04	0.00%
NP237	2.269E+02	0.02%
NP238	1.117E-07	0.00%
NP239	1.534E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	2.130E-04	0.00%
PU237	1.603E-07	0.00%
PU238	4.228E+01	0.00%
PU239	4.535E+03	0.31%
PU240	1.307E+03	0.09%
PU241	7.486E+02	0.05%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	5.379E+01	0.00%
AM242	7.122E-06	0.00%
AM242M	5.954E-01	0.00%
AM243	1.785E+01	0.00%
CM241	1.722E-10	0.00%
CM242	7.663E-01	0.00%
CM243	6.028E-02	0.00%
CM244	2.585E+00	0.00%
CM245	6.129E-02	0.00%
CM246	3.609E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	1.404E-09	0.00%
CF249	1.972E-09	0.00%
CF250	4.730E-10	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 2 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	4.927E-02	0.00%
HE 3	2.504E-03	0.00%
HE 4	1.515E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.727E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.349E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.415E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 35	1.899E-06	0.00%
S 36	3.858E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.349E-06	0.00%
AR 37	2.030E-12	0.00%
AR 38	7.744E-04	0.00%
AR 39	9.682E-07	0.00%
K 40	2.755E-04	0.00%
K 41	5.261E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.720E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 45	9.643E-07	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	5.978E-05	0.00%
SC 46	1.317E-07	0.00%
TI 46	8.781E+00	0.00%

TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 51	2.451E-09	0.00%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	8.161E-03	0.00%
MN 55	7.106E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	5.451E-01	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
FE 59	5.297E-08	0.00%
CO 58	1.149E-04	0.00%
CO 59	8.758E+01	0.01%
CO 60	3.926E+00	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.205E+01	0.00%
NI 60	2.886E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	4.301E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.320E+01	0.00%
CU 65	6.190E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	1.467E-03	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.636E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	1.183E-04	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.595E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	1.396E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	6.490E+01	0.00%
RB 86	2.072E-14	0.00%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 89	1.373E-03	0.00%
SR 90	3.381E+02	0.02%
Y 89	2.999E+02	0.02%

Y 90	8.479E-02	0.00%
Y 91	8.224E-03	0.00%
ZR 90	1.276E+05	8.86%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.266E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 95	2.637E-02	0.00%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	6.262E-04	0.00%
NB 94	3.211E+00	0.00%
NB 95	3.331E-02	0.00%
NB 95M	1.104E-05	0.00%
MO 92	5.706E+01	0.00%
MO 93	1.001E-02	0.00%
MO 94	3.663E+01	0.00%
MO 95	5.554E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.940E+02	0.03%
RU 99	4.706E-03	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU103	1.021E-04	0.00%
RU104	2.922E+02	0.02%
RU106	2.416E+01	0.00%
RH102	1.624E-04	0.00%
RH103	3.081E+02	0.02%
RH103M	9.130E-08	0.00%
RH106	2.270E-05	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.467E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.717E-02	0.00%
AG108	8.828E-13	0.00%
AG108M	2.796E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	1.287E-10	0.00%
AG110	5.726E-10	0.00%
AG110M	3.778E-02	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	1.302E-04	0.00%
CD110	1.270E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.418E-01	0.00%
CD113M	1.123E-01	0.00%
CD114	2.194E+01	0.00%
CD115M	6.697E-07	0.00%
CD116	6.426E+00	0.00%
IN113	4.422E-01	0.00%
IN113M	5.180E-07	0.00%
IN114	1.653E-12	0.00%
IN114M	1.027E-07	0.00%
IN115	2.239E+00	0.00%
IN115M	1.862E-13	0.00%
SN112	3.841E+01	0.00%
SN113	8.624E-04	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%

SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN117M	1.497E-17	0.00%
SN118	9.954E+02	0.07%
SN119	3.628E+02	0.03%
SN119M	1.351E-01	0.00%
SN120	1.352E+03	0.09%
SN121M	7.566E-03	0.00%
SN122	1.994E+02	0.01%
SN123	7.660E-03	0.00%
SN124	2.462E+02	0.02%
SN126	1.523E+01	0.00%
SB121	5.767E+00	0.00%
SB123	5.862E+00	0.00%
SB124	7.748E-06	0.00%
SB125	5.761E+00	0.00%
SB126	7.234E-07	0.00%
SB126M	5.499E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.298E-03	0.00%
TE123M	6.467E-06	0.00%
TE124	1.334E-01	0.00%
TE125	5.828E+00	0.00%
TE125M	8.058E-02	0.00%
TE126	3.812E-01	0.00%
TE127	4.158E-05	0.00%
TE127M	1.188E-02	0.00%
TE128	6.303E+01	0.00%
TE129	3.641E-10	0.00%
TE129M	3.888E-07	0.00%
TE130	2.067E+02	0.01%
I127	3.132E+01	0.00%
I129	1.053E+02	0.01%
XE127	3.298E-13	0.00%
XE128	9.462E-01	0.00%
XE129	3.037E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE131M	1.201E-19	0.00%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	2.516E+01	0.00%
CS135	2.072E+02	0.01%
CS136	7.073E-18	0.00%
CS137	6.960E+02	0.05%
BA132	4.753E-04	0.00%
BA134	3.435E+01	0.00%
BA135	3.944E-02	0.00%
BA136	7.951E+00	0.00%
BA136M	3.171E-25	0.00%
BA137	4.879E+01	0.00%
BA137M	1.065E-04	0.00%
BA138	7.843E+02	0.05%
BA140	1.364E-16	0.00%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
LA140	2.057E-17	0.00%
CE140	7.514E+02	0.05%
CE141	9.108E-06	0.00%
CE142	6.952E+02	0.05%
CE144	5.066E+01	0.00%
PR141	6.934E+02	0.05%
PR143	1.395E-15	0.00%
PR144	2.139E-03	0.00%
PR144M	1.069E-05	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%

ND144	6.932E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND147	9.551E-20	0.00%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	1.887E-03	0.00%
PM147	7.923E+01	0.01%
PM148	3.881E-08	0.00%
PM148M	5.298E-06	0.00%
SM146	1.432E-03	0.00%
SM147	9.181E+01	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	1.149E+01	0.00%
SM152	8.554E+01	0.01%
SM154	1.960E+01	0.00%
EU150	8.962E-08	0.00%
EU151	1.876E-01	0.00%
EU152	2.992E-02	0.00%
EU153	5.907E+01	0.00%
EU154	1.035E+01	0.00%
EU155	4.092E+00	0.00%
EU156	4.657E-15	0.00%
GD152	2.705E-02	0.00%
GD153	1.734E-04	0.00%
GD154	2.377E+00	0.00%
GD155	1.356E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
TB160	2.986E-05	0.00%
DY160	8.721E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.468E-04	0.00%
ER166	1.271E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM170	1.504E-08	0.00%
TM171	1.825E-08	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
LU177	1.708E-10	0.00%
LU177M	1.716E-08	0.00%
HF174	1.800E-02	0.00%
HF175	1.359E-06	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF181	1.490E-07	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	3.610E-05	0.00%
W180	8.644E-03	0.00%
W181	2.535E-06	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W185	3.254E-06	0.00%

W186	1.724E+00	0.00%
W188	1.012E-07	0.00%
RE185	1.163E-02	0.00%
RE187	3.464E-01	0.00%
RE188	1.043E-09	0.00%
OS186	2.828E-03	0.00%
OS187	1.329E-11	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	2.152E-11	0.00%
TL206	4.315E-17	0.00%
TL207	3.474E-15	0.00%
TL208	2.613E-12	0.00%
TL209	1.208E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.261E-01	0.00%
PB209	5.032E-15	0.00%
PB210	2.219E-11	0.00%
PB211	2.688E-14	0.00%
PB212	1.542E-09	0.00%
PB214	1.118E-15	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%
BI210	1.366E-14	0.00%
BI210M	1.663E-05	0.00%
BI211	1.585E-15	0.00%
BI212	1.462E-10	0.00%
BI213	1.183E-15	0.00%
BI214	8.296E-16	0.00%
PO210	1.848E-07	0.00%
PO211	1.945E-20	0.00%
PO212	7.735E-21	0.00%
PO213	1.774E-24	0.00%
PO214	1.141E-22	0.00%
PO215	2.251E-20	0.00%
PO216	6.151E-15	0.00%
PO218	1.296E-16	0.00%
AT217	1.420E-20	0.00%
RN219	5.100E-17	0.00%
RN220	2.322E-12	0.00%
RN222	2.382E-13	0.00%
FR221	1.290E-16	0.00%
FR223	2.364E-16	0.00%
RA223	1.295E-11	0.00%
RA224	1.344E-08	0.00%
RA225	5.832E-13	0.00%
RA226	3.706E-08	0.00%
RA228	1.783E-14	0.00%
AC225	3.940E-13	0.00%
AC227	9.159E-09	0.00%
AC228	1.861E-18	0.00%
TH227	2.129E-11	0.00%
TH228	2.607E-06	0.00%
TH229	1.075E-07	0.00%
TH230	2.137E-03	0.00%
TH231	5.295E-08	0.00%
TH232	2.599E-04	0.00%
TH234	1.388E-05	0.00%
PA231	1.919E-04	0.00%
PA233	7.711E-06	0.00%
PA234	2.090E-10	0.00%
PA234M	4.680E-10	0.00%
U232	2.155E-04	0.00%
U233	1.106E-03	0.00%
U234	2.008E+02	0.01%

U235	1.302E+04	0.90%
U236	2.926E+03	0.20%
U237	2.209E-05	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	3.580E-07	0.00%
NP236	1.248E-04	0.00%
NP237	2.270E+02	0.02%
NP238	1.111E-07	0.00%
NP239	1.534E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	1.670E-04	0.00%
PU237	6.221E-10	0.00%
PU238	4.254E+01	0.00%
PU239	4.535E+03	0.31%
PU240	1.307E+03	0.09%
PU241	7.134E+02	0.05%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	8.885E+01	0.01%
AM242	7.090E-06	0.00%
AM242M	5.927E-01	0.00%
AM243	1.785E+01	0.00%
CM241	1.520E-13	0.00%
CM242	1.635E-01	0.00%
CM243	5.884E-02	0.00%
CM244	2.488E+00	0.00%
CM245	6.128E-02	0.00%
CM246	3.609E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	6.364E-10	0.00%
CF249	2.735E-09	0.00%
CF250	4.486E-10	0.00%
TOTAL	*1.440E+06	100.00%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 3 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	4.658E-02	0.00%
HE 3	3.547E-03	0.00%
HE 4	1.531E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.727E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.347E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.414E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 35	1.069E-07	0.00%
S 36	3.858E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.813E-06	0.00%
AR 37	1.473E-15	0.00%
AR 38	7.744E-04	0.00%
AR 39	9.657E-07	0.00%
K 40	2.755E-04	0.00%
K 41	5.269E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.720E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 45	2.039E-07	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.054E-05	0.00%
SC 46	6.417E-09	0.00%
TI 46	8.781E+00	0.00%

TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 51	2.636E-13	0.00%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	3.630E-03	0.00%
MN 55	7.108E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	4.175E-01	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
FE 59	1.908E-10	0.00%
CO 58	3.210E-06	0.00%
CO 59	8.758E+01	0.01%
CO 60	3.442E+00	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.205E+01	0.00%
NI 60	2.886E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	4.269E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.323E+01	0.00%
CU 65	6.190E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	5.193E-04	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.636E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	1.571E-04	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.595E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	1.308E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	6.578E+01	0.00%
RB 86	2.651E-20	0.00%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 89	9.131E-06	0.00%
SR 90	3.302E+02	0.02%
Y 89	2.999E+02	0.02%

Y 90	8.280E-02	0.00%
Y 91	1.085E-04	0.00%
ZR 90	1.276E+05	8.86%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.266E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 95	5.043E-04	0.00%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	8.161E-04	0.00%
NB 94	3.211E+00	0.00%
NB 95	6.375E-04	0.00%
NB 95M	2.110E-07	0.00%
MO 92	5.706E+01	0.00%
MO 93	1.001E-02	0.00%
MO 94	3.663E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.940E+02	0.03%
RU 99	6.313E-03	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU103	1.622E-07	0.00%
RU104	2.922E+02	0.02%
RU106	1.214E+01	0.00%
RH102	1.279E-04	0.00%
RH103	3.081E+02	0.02%
RH103M	1.450E-10	0.00%
RH106	1.141E-05	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.587E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.718E-02	0.00%
AG108	8.778E-13	0.00%
AG108M	2.780E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	7.456E-11	0.00%
AG110	2.079E-10	0.00%
AG110M	1.372E-02	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	7.548E-05	0.00%
CD110	1.272E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.418E-01	0.00%
CD113M	1.071E-01	0.00%
CD114	2.194E+01	0.00%
CD115M	2.293E-09	0.00%
CD116	6.426E+00	0.00%
IN113	4.481E-01	0.00%
IN113M	5.742E-08	0.00%
IN114	9.938E-15	0.00%
IN114M	6.179E-10	0.00%
IN115	2.239E+00	0.00%
IN115M	6.375E-16	0.00%
SN112	3.841E+01	0.00%
SN113	9.561E-05	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%

SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN117M	2.109E-25	0.00%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN119M	4.809E-02	0.00%
SN120	1.352E+03	0.09%
SN121M	7.461E-03	0.00%
SN122	1.994E+02	0.01%
SN123	1.079E-03	0.00%
SN124	2.462E+02	0.02%
SN126	1.523E+01	0.00%
SB121	5.767E+00	0.00%
SB123	5.867E+00	0.00%
SB124	1.155E-07	0.00%
SB125	4.486E+00	0.00%
SB126	7.234E-07	0.00%
SB126M	5.499E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.303E-03	0.00%
TE123M	7.797E-07	0.00%
TE124	1.335E-01	0.00%
TE125	7.122E+00	0.00%
TE125M	6.275E-02	0.00%
TE126	3.813E-01	0.00%
TE127	4.076E-06	0.00%
TE127M	1.164E-03	0.00%
TE128	6.303E+01	0.00%
TE129	1.945E-13	0.00%
TE129M	2.077E-10	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE127	3.152E-16	0.00%
XE128	9.462E-01	0.00%
XE129	3.041E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE131M	6.894E-29	0.00%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	1.797E+01	0.00%
CS135	2.072E+02	0.01%
CS136	2.868E-26	0.00%
CS137	6.801E+02	0.05%
BA132	4.753E-04	0.00%
BA134	4.153E+01	0.00%
BA135	3.951E-02	0.00%
BA136	7.951E+00	0.00%
BA136M	1.286E-33	0.00%
BA137	6.469E+01	0.00%
BA137M	1.040E-04	0.00%
BA138	7.843E+02	0.05%
BA140	3.451E-25	0.00%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
LA140	5.204E-26	0.00%
CE140	7.514E+02	0.05%
CE141	3.780E-09	0.00%
CE142	6.952E+02	0.05%
CE144	2.079E+01	0.00%
PR141	6.934E+02	0.05%
PR143	1.094E-23	0.00%
PR144	8.778E-04	0.00%
PR144M	4.389E-06	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%

ND144	7.231E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND147	1.094E-29	0.00%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	1.664E-03	0.00%
PM147	6.084E+01	0.00%
PM148	8.441E-11	0.00%
PM148M	1.152E-08	0.00%
SM146	1.515E-03	0.00%
SM147	1.102E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	1.140E+01	0.00%
SM152	8.554E+01	0.01%
SM154	1.960E+01	0.00%
EU150	8.791E-08	0.00%
EU151	2.758E-01	0.00%
EU152	2.843E-02	0.00%
EU153	5.907E+01	0.00%
EU154	9.544E+00	0.00%
EU155	3.558E+00	0.00%
EU156	2.675E-22	0.00%
GD152	2.747E-02	0.00%
GD153	6.090E-05	0.00%
GD154	3.178E+00	0.00%
GD155	1.890E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
TB160	9.003E-07	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.467E-04	0.00%
ER166	1.271E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM170	2.100E-09	0.00%
TM171	1.272E-08	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
LU177	3.335E-11	0.00%
LU177M	3.350E-09	0.00%
HF174	1.800E-02	0.00%
HF175	3.651E-08	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF181	3.799E-10	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	3.994E-06	0.00%
W180	8.644E-03	0.00%
W181	3.138E-07	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W185	1.118E-07	0.00%

W186	1.724E+00	0.00%
W188	2.636E-09	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
RE188	2.715E-11	0.00%
OS186	2.828E-03	0.00%
OS187	1.808E-11	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	7.170E-13	0.00%
TL206	4.315E-17	0.00%
TL207	4.905E-15	0.00%
TL208	3.681E-12	0.00%
TL209	1.263E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.261E-01	0.00%
PB209	5.263E-15	0.00%
PB210	4.022E-11	0.00%
PB211	3.794E-14	0.00%
PB212	2.171E-09	0.00%
PB214	1.761E-15	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%
BI210	2.476E-14	0.00%
BI210M	1.663E-05	0.00%
BI211	2.239E-15	0.00%
BI212	2.060E-10	0.00%
BI213	1.237E-15	0.00%
BI214	1.308E-15	0.00%
PO210	2.968E-08	0.00%
PO211	2.747E-20	0.00%
PO212	1.090E-20	0.00%
PO213	1.856E-24	0.00%
PO214	1.799E-22	0.00%
PO215	3.177E-20	0.00%
PO216	8.665E-15	0.00%
PO218	2.042E-16	0.00%
AT217	1.486E-20	0.00%
RN219	7.200E-17	0.00%
RN220	3.271E-12	0.00%
RN222	3.755E-13	0.00%
FR221	1.349E-16	0.00%
FR223	3.336E-16	0.00%
RA223	1.829E-11	0.00%
RA224	1.894E-08	0.00%
RA225	6.100E-13	0.00%
RA226	5.841E-08	0.00%
RA228	3.004E-14	0.00%
AC225	4.120E-13	0.00%
AC227	1.293E-08	0.00%
AC228	3.136E-18	0.00%
TH227	3.006E-11	0.00%
TH228	3.671E-06	0.00%
TH229	1.124E-07	0.00%
TH230	2.697E-03	0.00%
TH231	5.295E-08	0.00%
TH232	3.450E-04	0.00%
TH234	1.388E-05	0.00%
PA231	2.045E-04	0.00%
PA233	7.717E-06	0.00%
PA234	2.090E-10	0.00%
PA234M	4.680E-10	0.00%
U232	2.488E-04	0.00%
U233	1.186E-03	0.00%
U234	2.011E+02	0.01%

U235	1.302E+04	0.90%
U236	2.926E+03	0.20%
U237	2.105E-05	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	1.889E-07	0.00%
NP236	1.248E-04	0.00%
NP237	2.271E+02	0.02%
NP238	1.106E-07	0.00%
NP239	1.533E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	1.310E-04	0.00%
PU237	2.413E-12	0.00%
PU238	4.233E+01	0.00%
PU239	4.534E+03	0.31%
PU240	1.307E+03	0.09%
PU241	6.799E+02	0.05%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	1.223E+02	0.01%
AM242	7.058E-06	0.00%
AM242M	5.900E-01	0.00%
AM243	1.785E+01	0.00%
CM241	1.341E-16	0.00%
CM242	3.579E-02	0.00%
CM243	5.742E-02	0.00%
CM244	2.394E+00	0.00%
CM245	6.127E-02	0.00%
CM246	3.608E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	2.885E-10	0.00%
CF249	3.077E-09	0.00%
CF250	4.255E-10	0.00%
TOTAL	*1.440E+06	100.00%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 5 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	4.164E-02	0.00%
HE 3	5.466E-03	0.00%
HE 4	1.563E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.727E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.341E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.411E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 35	3.390E-10	0.00%
S 36	3.858E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.739E-06	0.00%
AR 37	7.751E-22	0.00%
AR 38	7.744E-04	0.00%
AR 39	9.607E-07	0.00%
K 40	2.755E-04	0.00%
K 41	5.286E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.720E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 45	9.121E-09	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.073E-05	0.00%
SC 46	1.524E-11	0.00%
TI 46	8.781E+00	0.00%

TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 51	3.053E-21	0.00%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	7.181E-04	0.00%
MN 55	7.109E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	2.450E-01	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
FE 59	2.477E-15	0.00%
CO 58	2.509E-09	0.00%
CO 59	8.758E+01	0.01%
CO 60	2.646E+00	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.205E+01	0.00%
NI 60	2.887E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	4.205E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.329E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	6.511E-05	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.636E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	2.347E-04	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.595E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	1.150E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	6.737E+01	0.00%
RB 86	4.334E-32	0.00%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 89	4.035E-10	0.00%
SR 90	3.148E+02	0.02%
Y 89	2.999E+02	0.02%

Y 90	7.895E-02	0.00%
Y 91	1.893E-08	0.00%
ZR 90	1.276E+05	8.86%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.266E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 95	1.844E-07	0.00%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	1.168E-03	0.00%
NB 94	3.211E+00	0.00%
NB 95	2.249E-07	0.00%
NB 95M	7.715E-11	0.00%
MO 92	5.706E+01	0.00%
MO 93	1.000E-02	0.00%
MO 94	3.663E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.940E+02	0.03%
RU 99	9.528E-03	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU103	4.093E-13	0.00%
RU104	2.922E+02	0.02%
RU106	3.069E+00	0.00%
RH102	7.930E-05	0.00%
RH103	3.081E+02	0.02%
RH103M	3.660E-16	0.00%
RH106	2.886E-06	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.678E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.720E-02	0.00%
AG108	8.684E-13	0.00%
AG108M	2.750E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	2.504E-11	0.00%
AG110	2.740E-11	0.00%
AG110M	1.809E-03	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	2.534E-05	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.418E-01	0.00%
CD113M	9.736E-02	0.00%
CD114	2.194E+01	0.00%
CD115M	2.687E-14	0.00%
CD116	6.426E+00	0.00%
IN113	4.579E-01	0.00%
IN113M	7.057E-10	0.00%
IN114	3.599E-19	0.00%
IN114M	2.237E-14	0.00%
IN115	2.239E+00	0.00%
IN115M	7.471E-21	0.00%
SN112	3.841E+01	0.00%
SN113	1.175E-06	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%

SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN117M	4.187E-41	0.00%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN119M	6.089E-03	0.00%
SN120	1.352E+03	0.09%
SN121M	7.257E-03	0.00%
SN122	1.994E+02	0.01%
SN123	2.141E-05	0.00%
SN124	2.462E+02	0.02%
SN126	1.523E+01	0.00%
SB121	5.767E+00	0.00%
SB123	5.868E+00	0.00%
SB124	2.568E-11	0.00%
SB125	2.720E+00	0.00%
SB126	7.233E-07	0.00%
SB126M	5.499E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE123M	1.133E-08	0.00%
TE124	1.335E-01	0.00%
TE125	8.913E+00	0.00%
TE125M	3.805E-02	0.00%
TE126	3.815E-01	0.00%
TE127	3.916E-08	0.00%
TE127M	1.118E-05	0.00%
TE128	6.303E+01	0.00%
TE129	5.546E-20	0.00%
TE129M	5.924E-17	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE127	2.880E-22	0.00%
XE128	9.462E-01	0.00%
XE129	3.051E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE131M	2.272E-47	0.00%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	9.175E+00	0.00%
CS135	2.072E+02	0.01%
CS136	4.715E-43	0.00%
CS137	6.494E+02	0.05%
BA132	4.753E-04	0.00%
BA134	5.032E+01	0.00%
BA135	3.964E-02	0.00%
BA136	7.951E+00	0.00%
BA136M	2.114E-50	0.00%
BA137	9.540E+01	0.01%
BA137M	9.935E-05	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE141	6.511E-16	0.00%
CE142	6.952E+02	0.05%
CE144	3.501E+00	0.00%
PR141	6.934E+02	0.05%
PR143	6.729E-40	0.00%
PR144	1.478E-04	0.00%
PR144M	7.390E-07	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.404E+02	0.05%
ND145	4.377E+02	0.03%

ND146	3.988E+02	0.03%
ND147	1.434E-49	0.00%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	1.293E-03	0.00%
PM147	3.586E+01	0.00%
PM148	3.995E-16	0.00%
PM148M	5.453E-14	0.00%
SM146	1.652E-03	0.00%
SM147	1.352E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	1.122E+01	0.00%
SM152	8.555E+01	0.01%
SM154	1.960E+01	0.00%
EU150	8.459E-08	0.00%
EU151	4.500E-01	0.00%
EU152	2.567E-02	0.00%
EU153	5.907E+01	0.00%
EU154	8.123E+00	0.00%
EU155	2.691E+00	0.00%
EU156	8.831E-37	0.00%
GD152	2.824E-02	0.00%
GD153	7.515E-06	0.00%
GD154	4.599E+00	0.00%
GD155	2.758E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
TB160	8.185E-10	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.464E-04	0.00%
ER166	1.271E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM170	4.095E-11	0.00%
TM171	6.180E-09	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
LU177	1.272E-12	0.00%
LU177M	1.278E-10	0.00%
HF174	1.800E-02	0.00%
HF175	2.636E-11	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF181	2.471E-15	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	4.893E-08	0.00%
W180	8.644E-03	0.00%
W181	4.809E-09	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W185	1.319E-10	0.00%
W186	1.724E+00	0.00%
W188	1.788E-12	0.00%

RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
RE188	1.841E-14	0.00%
OS186	2.828E-03	0.00%
OS187	2.769E-11	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	1.469E-14	0.00%
TL206	4.315E-17	0.00%
TL207	7.921E-15	0.00%
TL208	5.499E-12	0.00%
TL209	1.386E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.261E-01	0.00%
PB209	5.773E-15	0.00%
PB210	1.046E-10	0.00%
PB211	6.128E-14	0.00%
PB212	3.244E-09	0.00%
PB214	3.497E-15	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%
BI210	6.438E-14	0.00%
BI210M	1.663E-05	0.00%
BI211	3.616E-15	0.00%
BI212	3.077E-10	0.00%
BI213	1.357E-15	0.00%
BI214	2.597E-15	0.00%
PO210	7.667E-10	0.00%
PO211	4.436E-20	0.00%
PO212	1.628E-20	0.00%
PO213	2.035E-24	0.00%
PO214	3.572E-22	0.00%
PO215	5.131E-20	0.00%
PO216	1.294E-14	0.00%
PO218	4.055E-16	0.00%
AT217	1.629E-20	0.00%
RN219	1.163E-16	0.00%
RN220	4.886E-12	0.00%
RN222	7.455E-13	0.00%
FR221	1.480E-16	0.00%
FR223	5.390E-16	0.00%
RA223	2.954E-11	0.00%
RA224	2.829E-08	0.00%
RA225	6.690E-13	0.00%
RA226	1.160E-07	0.00%
RA228	6.236E-14	0.00%
AC225	4.520E-13	0.00%
AC227	2.088E-08	0.00%
AC228	6.509E-18	0.00%
TH227	4.854E-11	0.00%
TH228	5.489E-06	0.00%
TH229	1.233E-07	0.00%
TH230	3.819E-03	0.00%
TH231	5.295E-08	0.00%
TH232	5.152E-04	0.00%
TH234	1.388E-05	0.00%
PA231	2.298E-04	0.00%
PA233	7.733E-06	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	2.931E-04	0.00%
U233	1.340E-03	0.00%
U234	2.018E+02	0.01%
U235	1.302E+04	0.90%
U236	2.926E+03	0.20%

U237	1.911E-05	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	5.261E-08	0.00%
NP236	1.248E-04	0.00%
NP237	2.277E+02	0.02%
NP238	1.096E-07	0.00%
NP239	1.533E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	8.053E-05	0.00%
PU237	3.632E-17	0.00%
PU238	4.171E+01	0.00%
PU239	4.534E+03	0.31%
PU240	1.307E+03	0.09%
PU241	6.174E+02	0.04%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	1.842E+02	0.01%
AM242	6.993E-06	0.00%
AM242M	5.846E-01	0.00%
AM243	1.784E+01	0.00%
CM241	1.045E-22	0.00%
CM242	2.961E-03	0.00%
CM243	5.470E-02	0.00%
CM244	2.217E+00	0.00%
CM245	6.126E-02	0.00%
CM246	3.607E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	5.930E-11	0.00%
CF249	3.293E-09	0.00%
CF250	3.827E-10	0.00%
TOTAL	*1.440E+06	100.00%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 10 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	3.145E-02	0.00%
HE 3	9.417E-03	0.00%
HE 4	1.653E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.726E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.329E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.403E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 35	1.918E-16	0.00%
S 36	3.859E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	5.056E-06	0.00%
AR 37	1.557E-37	0.00%
AR 38	7.744E-04	0.00%
AR 39	9.484E-07	0.00%
K 40	2.755E-04	0.00%
K 41	5.328E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.720E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 45	3.860E-12	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
SC 46	4.192E-18	0.00%
TI 46	8.781E+00	0.00%

TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 51	4.405E-41	0.00%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	1.250E-05	0.00%
MN 55	7.111E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	6.461E-02	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
FE 59	1.503E-27	0.00%
CO 58	4.284E-17	0.00%
CO 59	8.758E+01	0.01%
CO 60	1.371E+00	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.205E+01	0.00%
NI 60	2.888E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	4.049E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.345E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	3.625E-07	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.636E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	4.286E-04	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.595E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	8.322E+00	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.055E+01	0.00%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 89	5.237E-21	0.00%
SR 90	2.795E+02	0.02%
Y 89	2.999E+02	0.02%
Y 90	7.010E-02	0.00%

Y 91	7.600E-18	0.00%
ZR 90	1.277E+05	8.87%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.266E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 95	4.713E-16	0.00%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	1.906E-03	0.00%
NB 94	3.210E+00	0.00%
NB 95	5.749E-16	0.00%
NB 95M	1.972E-19	0.00%
MO 92	5.706E+01	0.00%
MO 93	9.991E-03	0.00%
MO 94	3.663E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.940E+02	0.03%
RU 99	1.757E-02	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU103	4.140E-27	0.00%
RU104	2.922E+02	0.02%
RU106	9.860E-02	0.00%
RH102	2.400E-05	0.00%
RH103	3.081E+02	0.02%
RH103M	3.703E-30	0.00%
RH106	9.269E-08	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.725E-02	0.00%
AG108	8.449E-13	0.00%
AG108M	2.676E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	1.635E-12	0.00%
AG110	1.729E-13	0.00%
AG110M	1.141E-05	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	1.656E-06	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.418E-01	0.00%
CD113M	7.678E-02	0.00%
CD114	2.194E+01	0.00%
CD115M	1.264E-26	0.00%
CD116	6.426E+00	0.00%
IN113	4.785E-01	0.00%
IN113M	1.181E-14	0.00%
IN114	2.838E-30	0.00%
IN114M	1.765E-25	0.00%
IN115	2.239E+00	0.00%
IN115M	3.512E-33	0.00%
SN112	3.841E+01	0.00%
SN113	1.967E-11	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%

SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN119M	3.475E-05	0.00%
SN120	1.352E+03	0.09%
SN121M	6.771E-03	0.00%
SN122	1.994E+02	0.01%
SN123	1.187E-09	0.00%
SN124	2.462E+02	0.02%
SN126	1.523E+01	0.00%
SB121	5.767E+00	0.00%
SB123	5.868E+00	0.00%
SB124	1.893E-20	0.00%
SB125	7.783E-01	0.00%
SB126	7.233E-07	0.00%
SB126M	5.499E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE123M	2.889E-13	0.00%
TE124	1.335E-01	0.00%
TE125	1.088E+01	0.00%
TE125M	1.089E-02	0.00%
TE126	3.820E-01	0.00%
TE127	3.543E-13	0.00%
TE127M	1.012E-10	0.00%
TE128	6.303E+01	0.00%
TE129	2.410E-36	0.00%
TE129M	2.574E-33	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE127	2.297E-37	0.00%
XE128	9.462E-01	0.00%
XE129	3.075E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	1.708E+00	0.00%
CS135	2.072E+02	0.01%
CS137	5.785E+02	0.04%
BA132	4.753E-04	0.00%
BA134	5.779E+01	0.00%
BA135	3.995E-02	0.00%
BA136	7.951E+00	0.00%
BA137	1.662E+02	0.01%
BA137M	8.851E-05	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
CE144	4.076E-02	0.00%
PR141	6.934E+02	0.05%
PR144	1.721E-06	0.00%
PR144M	8.604E-09	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	6.885E-04	0.00%
PM147	9.570E+00	0.00%
PM148	1.945E-29	0.00%
PM148M	2.656E-27	0.00%

SM146	1.875E-03	0.00%
SM147	1.615E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	1.080E+01	0.00%
SM152	8.555E+01	0.01%
SM154	1.960E+01	0.00%
EU150	7.683E-08	0.00%
EU151	8.740E-01	0.00%
EU152	1.990E-02	0.00%
EU153	5.907E+01	0.00%
EU154	5.428E+00	0.00%
EU155	1.337E+00	0.00%
GD152	2.985E-02	0.00%
GD153	4.022E-08	0.00%
GD154	7.292E+00	0.00%
GD155	4.110E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
TB160	2.039E-17	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.457E-04	0.00%
ER166	1.271E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM170	2.172E-15	0.00%
TM171	1.016E-09	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
LU177	3.611E-16	0.00%
LU177M	3.628E-14	0.00%
HF174	1.800E-02	0.00%
HF175	3.692E-19	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF181	2.664E-28	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.966E-11	0.00%
W180	8.644E-03	0.00%
W181	1.397E-13	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W185	6.308E-18	0.00%
W186	1.724E+00	0.00%
W188	2.140E-20	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
RE188	2.204E-22	0.00%
OS186	2.828E-03	0.00%
OS187	5.170E-11	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	1.374E-14	0.00%

TL206	4.315E-17	0.00%
TL207	1.631E-14	0.00%
TL208	7.986E-12	0.00%
TL209	1.753E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.261E-01	0.00%
PB209	7.304E-15	0.00%
PB210	5.063E-10	0.00%
PB211	1.262E-13	0.00%
PB212	4.711E-09	0.00%
PB214	1.046E-14	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%
BI210	3.116E-13	0.00%
BI210M	1.663E-05	0.00%
BI211	7.444E-15	0.00%
BI212	4.468E-10	0.00%
BI213	1.717E-15	0.00%
BI214	7.763E-15	0.00%
PO210	8.698E-12	0.00%
PO211	9.133E-20	0.00%
PO212	2.364E-20	0.00%
PO213	2.575E-24	0.00%
PO214	1.068E-21	0.00%
PO215	1.057E-19	0.00%
PO216	1.880E-14	0.00%
PO218	1.212E-15	0.00%
AT217	2.062E-20	0.00%
RN219	2.394E-16	0.00%
RN220	7.097E-12	0.00%
RN222	2.229E-12	0.00%
FR221	1.873E-16	0.00%
FR223	1.110E-15	0.00%
RA223	6.081E-11	0.00%
RA224	4.109E-08	0.00%
RA225	8.466E-13	0.00%
RA226	3.468E-07	0.00%
RA228	1.784E-13	0.00%
AC225	5.719E-13	0.00%
AC227	4.301E-08	0.00%
AC228	1.863E-17	0.00%
TH227	9.994E-11	0.00%
TH228	7.981E-06	0.00%
TH229	1.560E-07	0.00%
TH230	6.642E-03	0.00%
TH231	5.296E-08	0.00%
TH232	9.410E-04	0.00%
TH234	1.388E-05	0.00%
PA231	2.930E-04	0.00%
PA233	7.801E-06	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	3.335E-04	0.00%
U233	1.704E-03	0.00%
U234	2.034E+02	0.01%
U235	1.302E+04	0.90%
U236	2.927E+03	0.20%
U237	1.503E-05	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	2.153E-09	0.00%
NP236	1.248E-04	0.00%
NP237	2.297E+02	0.02%
NP238	1.071E-07	0.00%
NP239	1.532E-05	0.00%
NP240M	5.192E-16	0.00%

PU236	2.387E-05	0.00%
PU237	3.193E-29	0.00%
PU238	4.010E+01	0.00%
PU239	4.534E+03	0.31%
PU240	1.307E+03	0.09%
PU241	4.854E+02	0.03%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	3.142E+02	0.02%
AM242	6.836E-06	0.00%
AM242M	5.715E-01	0.00%
AM243	1.783E+01	0.00%
CM241	5.601E-38	0.00%
CM242	1.384E-03	0.00%
CM243	4.843E-02	0.00%
CM244	1.832E+00	0.00%
CM245	6.124E-02	0.00%
CM246	3.605E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	1.135E-12	0.00%
CF249	3.318E-09	0.00%
CF250	2.936E-10	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 15 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	2.375E-02	0.00%
HE 3	1.241E-02	0.00%
HE 4	1.757E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.725E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.317E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.396E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 35	1.086E-22	0.00%
S 36	3.859E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	7.372E-06	0.00%
AR 37	3.130E-53	0.00%
AR 38	7.744E-04	0.00%
AR 39	9.363E-07	0.00%
K 40	2.755E-04	0.00%
K 41	5.369E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.720E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 45	1.634E-15	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
SC 46	1.153E-24	0.00%
TI 46	8.781E+00	0.00%

TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 51	6.355E-61	0.00%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	2.177E-07	0.00%
MN 55	7.111E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	1.703E-02	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
FE 59	9.126E-40	0.00%
CO 58	7.316E-25	0.00%
CO 59	8.758E+01	0.01%
CO 60	7.100E-01	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.205E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	3.900E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.360E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	2.019E-09	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.635E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	6.227E-04	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.594E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	6.023E+00	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.284E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 89	6.797E-32	0.00%
SR 90	2.481E+02	0.02%
Y 89	2.999E+02	0.02%
Y 90	6.223E-02	0.00%

Y 91	3.050E-27	0.00%
ZR 90	1.277E+05	8.87%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.266E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 95	1.205E-24	0.00%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	2.478E-03	0.00%
NB 94	3.209E+00	0.00%
NB 95	1.470E-24	0.00%
NB 95M	5.041E-28	0.00%
MO 92	5.706E+01	0.00%
MO 93	9.981E-03	0.00%
MO 94	3.663E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.940E+02	0.03%
RU 99	2.560E-02	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU103	4.189E-41	0.00%
RU104	2.922E+02	0.02%
RU106	3.167E-03	0.00%
RH102	7.264E-06	0.00%
RH103	3.081E+02	0.02%
RH103M	3.746E-44	0.00%
RH106	2.977E-09	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.731E-02	0.00%
AG108	8.222E-13	0.00%
AG108M	2.603E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	1.068E-13	0.00%
AG110	1.092E-15	0.00%
AG110M	7.197E-08	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	1.082E-07	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.418E-01	0.00%
CD113M	6.054E-02	0.00%
CD114	2.194E+01	0.00%
CD115M	5.939E-39	0.00%
CD116	6.426E+00	0.00%
IN113	4.947E-01	0.00%
IN113M	1.979E-19	0.00%
IN114	2.239E-41	0.00%
IN114M	1.392E-36	0.00%
IN115	2.239E+00	0.00%
IN115M	1.651E-45	0.00%
SN112	3.841E+01	0.00%
SN113	3.294E-16	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%

SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN119M	1.982E-07	0.00%
SN120	1.352E+03	0.09%
SN121M	6.317E-03	0.00%
SN122	1.994E+02	0.01%
SN123	6.579E-14	0.00%
SN124	2.462E+02	0.02%
SN126	1.523E+01	0.00%
SB121	5.768E+00	0.00%
SB123	5.868E+00	0.00%
SB124	1.394E-29	0.00%
SB125	2.227E-01	0.00%
SB126	7.233E-07	0.00%
SB126M	5.499E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE123M	7.362E-18	0.00%
TE124	1.335E-01	0.00%
TE125	1.145E+01	0.00%
TE125M	3.114E-03	0.00%
TE126	3.825E-01	0.00%
TE127	3.206E-18	0.00%
TE127M	9.158E-16	0.00%
TE128	6.303E+01	0.00%
TE129	1.047E-52	0.00%
TE129M	1.118E-49	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE127	1.832E-52	0.00%
XE128	9.462E-01	0.00%
XE129	3.098E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	3.182E-01	0.00%
CS135	2.072E+02	0.01%
CS137	5.154E+02	0.04%
BA132	4.753E-04	0.00%
BA134	5.918E+01	0.00%
BA135	4.027E-02	0.00%
BA136	7.951E+00	0.00%
BA137	2.294E+02	0.02%
BA137M	7.885E-05	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
CE144	4.745E-04	0.00%
PR141	6.934E+02	0.05%
PR144	2.004E-08	0.00%
PR144M	1.002E-10	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	3.666E-04	0.00%
PM147	2.554E+00	0.00%
PM148	9.473E-43	0.00%
PM148M	1.294E-40	0.00%

SM146	1.994E-03	0.00%
SM147	1.685E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	1.039E+01	0.00%
SM152	8.555E+01	0.01%
SM154	1.960E+01	0.00%
EU150	6.977E-08	0.00%
EU151	1.282E+00	0.00%
EU152	1.542E-02	0.00%
EU153	5.907E+01	0.00%
EU154	3.628E+00	0.00%
EU155	6.650E-01	0.00%
GD152	3.109E-02	0.00%
GD153	2.152E-10	0.00%
GD154	9.094E+00	0.00%
GD155	4.783E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
TB160	5.082E-25	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.449E-04	0.00%
ER166	1.271E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM170	1.152E-19	0.00%
TM171	1.671E-10	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
LU177	1.025E-19	0.00%
LU177M	1.030E-17	0.00%
HF174	1.800E-02	0.00%
HF175	5.171E-27	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF181	2.873E-41	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.885E-11	0.00%
W180	8.644E-03	0.00%
W181	4.062E-18	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W185	3.017E-25	0.00%
W186	1.724E+00	0.00%
W188	2.562E-28	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
RE188	2.639E-30	0.00%
OS186	2.828E-03	0.00%
OS187	7.570E-11	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	1.354E-14	0.00%

TL206	4.315E-17	0.00%
TL207	2.577E-14	0.00%
TL208	8.635E-12	0.00%
TL209	2.209E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.261E-01	0.00%
PB209	9.203E-15	0.00%
PB210	1.399E-09	0.00%
PB211	1.993E-13	0.00%
PB212	5.093E-09	0.00%
PB214	2.117E-14	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%
BI210	8.608E-13	0.00%
BI210M	1.663E-05	0.00%
BI211	1.177E-14	0.00%
BI212	4.831E-10	0.00%
BI213	2.162E-15	0.00%
BI214	1.572E-14	0.00%
PO210	2.379E-11	0.00%
PO211	1.443E-19	0.00%
PO212	2.556E-20	0.00%
PO213	3.244E-24	0.00%
PO214	2.162E-21	0.00%
PO215	1.669E-19	0.00%
PO216	2.032E-14	0.00%
PO218	2.455E-15	0.00%
AT217	2.598E-20	0.00%
RN219	3.783E-16	0.00%
RN220	7.672E-12	0.00%
RN222	4.514E-12	0.00%
FR221	2.359E-16	0.00%
FR223	1.754E-15	0.00%
RA223	9.610E-11	0.00%
RA224	4.443E-08	0.00%
RA225	1.067E-12	0.00%
RA226	7.022E-07	0.00%
RA228	3.283E-13	0.00%
AC225	7.206E-13	0.00%
AC227	6.795E-08	0.00%
AC228	3.426E-17	0.00%
TH227	1.579E-10	0.00%
TH228	8.626E-06	0.00%
TH229	1.966E-07	0.00%
TH230	9.483E-03	0.00%
TH231	5.297E-08	0.00%
TH232	1.367E-03	0.00%
TH234	1.388E-05	0.00%
PA231	3.560E-04	0.00%
PA233	7.899E-06	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	3.339E-04	0.00%
U233	2.072E-03	0.00%
U234	2.049E+02	0.01%
U235	1.303E+04	0.90%
U236	2.927E+03	0.20%
U237	1.182E-05	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	8.810E-11	0.00%
NP236	1.248E-04	0.00%
NP237	2.326E+02	0.02%
NP238	1.047E-07	0.00%
NP239	1.531E-05	0.00%
NP240M	5.192E-16	0.00%

PU236	7.080E-06	0.00%
PU237	2.806E-41	0.00%
PU238	3.856E+01	0.00%
PU239	4.533E+03	0.31%
PU240	1.307E+03	0.09%
PU241	3.815E+02	0.03%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	4.151E+02	0.03%
AM242	6.682E-06	0.00%
AM242M	5.586E-01	0.00%
AM243	1.782E+01	0.00%
CM241	3.001E-53	0.00%
CM242	1.352E-03	0.00%
CM243	4.289E-02	0.00%
CM244	1.512E+00	0.00%
CM245	6.121E-02	0.00%
CM246	3.602E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	2.174E-14	0.00%
CF249	3.287E-09	0.00%
CF250	2.253E-10	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 20 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	1.794E-02	0.00%
HE 3	1.466E-02	0.00%
HE 4	1.871E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.724E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.304E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.388E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 35	6.145E-29	0.00%
S 36	3.859E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	9.689E-06	0.00%
AR 37	6.288E-69	0.00%
AR 38	7.744E-04	0.00%
AR 39	9.243E-07	0.00%
K 40	2.755E-04	0.00%
K 41	5.411E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.720E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 45	6.911E-19	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
SC 46	3.171E-31	0.00%
TI 46	8.781E+00	0.00%

TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 51	9.168E-81	0.00%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	3.789E-09	0.00%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	4.492E-03	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
FE 59	5.540E-52	0.00%
CO 58	1.249E-32	0.00%
CO 59	8.758E+01	0.01%
CO 60	3.678E-01	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.204E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	3.755E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.375E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	1.124E-11	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.635E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	8.166E-04	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.594E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	4.359E+00	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.450E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 89	8.822E-43	0.00%
SR 90	2.203E+02	0.02%
Y 89	2.999E+02	0.02%
Y 90	5.524E-02	0.00%

Y 91	1.224E-36	0.00%
ZR 90	1.277E+05	8.87%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.266E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 95	3.080E-33	0.00%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	2.920E-03	0.00%
NB 94	3.209E+00	0.00%
NB 95	3.757E-33	0.00%
NB 95M	1.289E-36	0.00%
MO 92	5.706E+01	0.00%
MO 93	9.971E-03	0.00%
MO 94	3.663E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.940E+02	0.03%
RU 99	3.363E-02	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU103	4.238E-55	0.00%
RU104	2.922E+02	0.02%
RU106	1.017E-04	0.00%
RH102	2.199E-06	0.00%
RH103	3.081E+02	0.02%
RH103M	3.789E-58	0.00%
RH106	9.561E-11	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.737E-02	0.00%
AG108	8.001E-13	0.00%
AG108M	2.533E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	6.985E-15	0.00%
AG110	6.882E-18	0.00%
AG110M	4.541E-10	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	7.071E-09	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.418E-01	0.00%
CD113M	4.774E-02	0.00%
CD114	2.194E+01	0.00%
CD115M	2.791E-51	0.00%
CD116	6.426E+00	0.00%
IN113	5.075E-01	0.00%
IN113M	3.312E-24	0.00%
IN114	1.766E-52	0.00%
IN114M	1.098E-47	0.00%
IN115	2.239E+00	0.00%
IN115M	7.763E-58	0.00%
SN112	3.841E+01	0.00%
SN113	5.515E-21	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%

SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN119M	1.131E-09	0.00%
SN120	1.352E+03	0.09%
SN121M	5.894E-03	0.00%
SN122	1.994E+02	0.01%
SN123	3.648E-18	0.00%
SN124	2.462E+02	0.02%
SN126	1.523E+01	0.00%
SB121	5.768E+00	0.00%
SB123	5.868E+00	0.00%
SB124	1.027E-38	0.00%
SB125	6.372E-02	0.00%
SB126	7.233E-07	0.00%
SB126M	5.499E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE123M	1.877E-22	0.00%
TE124	1.335E-01	0.00%
TE125	1.160E+01	0.00%
TE125M	8.913E-04	0.00%
TE126	3.831E-01	0.00%
TE127	2.901E-23	0.00%
TE127M	8.287E-21	0.00%
TE128	6.303E+01	0.00%
TE129	4.550E-69	0.00%
TE129M	4.859E-66	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE127	1.461E-67	0.00%
XE128	9.462E-01	0.00%
XE129	3.122E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	5.925E-02	0.00%
CS135	2.072E+02	0.01%
CS137	4.592E+02	0.03%
BA132	4.753E-04	0.00%
BA134	5.944E+01	0.00%
BA135	4.058E-02	0.00%
BA136	7.951E+00	0.00%
BA137	2.856E+02	0.02%
BA137M	7.025E-05	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
CE144	5.524E-06	0.00%
PR141	6.934E+02	0.05%
PR144	2.333E-10	0.00%
PR144M	1.166E-12	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	1.953E-04	0.00%
PM147	6.815E-01	0.00%
PM148	4.613E-56	0.00%
PM148M	6.298E-54	0.00%

SM146	2.058E-03	0.00%
SM147	1.703E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	9.996E+00	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU150	6.337E-08	0.00%
EU151	1.675E+00	0.00%
EU152	1.196E-02	0.00%
EU153	5.907E+01	0.00%
EU154	2.424E+00	0.00%
EU155	3.306E-01	0.00%
GD152	3.206E-02	0.00%
GD153	1.151E-12	0.00%
GD154	1.030E+01	0.00%
GD155	5.117E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
TB160	1.267E-32	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.443E-04	0.00%
ER166	1.271E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM170	6.113E-24	0.00%
TM171	2.749E-11	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
LU177	2.910E-23	0.00%
LU177M	2.924E-21	0.00%
HF174	1.800E-02	0.00%
HF175	7.243E-35	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF181	3.098E-54	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.885E-11	0.00%
W180	8.644E-03	0.00%
W181	1.180E-22	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W185	1.443E-32	0.00%
W186	1.724E+00	0.00%
W188	3.068E-36	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
RE188	3.161E-38	0.00%
OS186	2.828E-03	0.00%
OS187	9.971E-11	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	1.335E-14	0.00%

TL206	4.315E-17	0.00%
TL207	3.614E-14	0.00%
TL208	8.566E-12	0.00%
TL209	2.754E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.261E-01	0.00%
PB209	1.147E-14	0.00%
PB210	2.945E-09	0.00%
PB211	2.796E-13	0.00%
PB212	5.053E-09	0.00%
PB214	3.567E-14	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%
BI210	1.812E-12	0.00%
BI210M	1.663E-05	0.00%
BI211	1.649E-14	0.00%
BI212	4.793E-10	0.00%
BI213	2.696E-15	0.00%
BI214	2.649E-14	0.00%
PO210	5.007E-11	0.00%
PO211	2.024E-19	0.00%
PO212	2.535E-20	0.00%
PO213	4.045E-24	0.00%
PO214	3.643E-21	0.00%
PO215	2.341E-19	0.00%
PO216	2.016E-14	0.00%
PO218	4.136E-15	0.00%
AT217	3.239E-20	0.00%
RN219	5.305E-16	0.00%
RN220	7.612E-12	0.00%
RN222	7.604E-12	0.00%
FR221	2.941E-16	0.00%
FR223	2.459E-15	0.00%
RA223	1.348E-10	0.00%
RA224	4.407E-08	0.00%
RA225	1.330E-12	0.00%
RA226	1.183E-06	0.00%
RA228	4.981E-13	0.00%
AC225	8.984E-13	0.00%
AC227	9.528E-08	0.00%
AC228	5.200E-17	0.00%
TH227	2.215E-10	0.00%
TH228	8.558E-06	0.00%
TH229	2.451E-07	0.00%
TH230	1.235E-02	0.00%
TH231	5.297E-08	0.00%
TH232	1.793E-03	0.00%
TH234	1.388E-05	0.00%
PA231	4.192E-04	0.00%
PA233	8.022E-06	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	3.229E-04	0.00%
U233	2.445E-03	0.00%
U234	2.064E+02	0.01%
U235	1.303E+04	0.90%
U236	2.928E+03	0.20%
U237	9.286E-06	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	3.605E-12	0.00%
NP236	1.248E-04	0.00%
NP237	2.362E+02	0.02%
NP238	1.024E-07	0.00%
NP239	1.531E-05	0.00%
NP240M	5.192E-16	0.00%

PU236	2.100E-06	0.00%
PU237	2.466E-53	0.00%
PU238	3.708E+01	0.00%
PU239	4.532E+03	0.31%
PU240	1.306E+03	0.09%
PU241	2.999E+02	0.02%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	4.930E+02	0.03%
AM242	6.531E-06	0.00%
AM242M	5.460E-01	0.00%
AM243	1.781E+01	0.00%
CM241	1.608E-68	0.00%
CM242	1.321E-03	0.00%
CM243	3.798E-02	0.00%
CM244	1.249E+00	0.00%
CM245	6.119E-02	0.00%
CM246	3.600E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	4.164E-16	0.00%
CF249	3.254E-09	0.00%
CF250	1.729E-10	0.00%
TOTAL	*1.440E+06	100.00%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 30 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	1.024E-02	0.00%
HE 3	1.764E-02	0.00%
HE 4	2.117E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.722E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.280E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.373E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 35	1.969E-41	0.00%
S 36	3.859E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.432E-05	0.00%
AR 38	7.744E-04	0.00%
AR 39	9.008E-07	0.00%
K 40	2.755E-04	0.00%
K 41	5.494E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.719E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 45	1.238E-25	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
SC 46	2.399E-44	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%

TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	1.148E-12	0.00%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	3.124E-04	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 58	3.642E-48	0.00%
CO 59	8.759E+01	0.01%
CO 60	9.872E-02	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.204E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	3.483E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.402E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	3.483E-16	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.635E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	1.204E-03	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.594E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	2.284E+00	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.658E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 90	1.737E+02	0.01%
Y 89	2.999E+02	0.02%
Y 90	4.355E-02	0.00%
Y 91	1.972E-55	0.00%
ZR 90	1.278E+05	8.88%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%

ZR 93	5.266E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 95	2.012E-50	0.00%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	3.530E-03	0.00%
NB 94	3.208E+00	0.00%
NB 95	2.454E-50	0.00%
NB 95M	8.419E-54	0.00%
MO 92	5.706E+01	0.00%
MO 93	9.952E-03	0.00%
MO 94	3.663E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.939E+02	0.03%
RU 99	4.971E-02	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RU106	1.050E-07	0.00%
RH102	2.015E-07	0.00%
RH103	3.081E+02	0.02%
RH106	9.865E-14	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.748E-02	0.00%
AG108	7.577E-13	0.00%
AG108M	2.399E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	2.982E-17	0.00%
AG110	2.739E-22	0.00%
AG110M	1.808E-14	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	3.019E-11	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.418E-01	0.00%
CD113M	2.969E-02	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.255E-01	0.00%
IN113M	9.285E-34	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN113	1.546E-30	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN119M	3.683E-14	0.00%
SN120	1.352E+03	0.09%
SN121M	5.130E-03	0.00%
SN122	1.994E+02	0.01%
SN123	1.121E-26	0.00%
SN124	2.462E+02	0.02%
SN126	1.523E+01	0.00%

SB121	5.769E+00	0.00%
SB123	5.868E+00	0.00%
SB124	5.577E-57	0.00%
SB125	5.218E-03	0.00%
SB126	7.232E-07	0.00%
SB126M	5.498E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE123M	1.219E-31	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE125M	7.299E-05	0.00%
TE126	3.841E-01	0.00%
TE127	2.376E-33	0.00%
TE127M	6.785E-31	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE128	9.462E-01	0.00%
XE129	3.169E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	2.055E-03	0.00%
CS135	2.072E+02	0.01%
CS137	3.645E+02	0.03%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	4.122E-02	0.00%
BA136	7.951E+00	0.00%
BA137	3.803E+02	0.03%
BA137M	5.575E-05	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
CE144	7.487E-10	0.00%
PR141	6.934E+02	0.05%
PR144	3.161E-14	0.00%
PR144M	1.580E-16	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	5.537E-05	0.00%
PM147	4.853E-02	0.00%
SM146	2.110E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	9.258E+00	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU150	5.227E-08	0.00%
EU151	2.416E+00	0.00%
EU152	7.180E-03	0.00%
EU153	5.907E+01	0.00%
EU154	1.083E+00	0.00%
EU155	8.171E-02	0.00%
GD152	3.339E-02	0.00%

GD153	3.297E-17	0.00%
GD154	1.163E+01	0.00%
GD155	5.366E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
TB160	7.863E-48	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.429E-04	0.00%
ER166	1.271E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM170	1.720E-32	0.00%
TM171	7.434E-13	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
LU177	2.346E-30	0.00%
LU177M	2.357E-28	0.00%
HF174	1.800E-02	0.00%
HF175	1.421E-50	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.885E-11	0.00%
W180	8.644E-03	0.00%
W181	9.970E-32	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W185	3.301E-47	0.00%
W186	1.724E+00	0.00%
W188	4.399E-52	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
RE188	4.531E-54	0.00%
OS186	2.828E-03	0.00%
OS187	1.477E-10	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	1.297E-14	0.00%
TL206	4.315E-17	0.00%
TL207	5.906E-14	0.00%
TL208	7.907E-12	0.00%
TL209	4.117E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.262E-01	0.00%
PB209	1.715E-14	0.00%
PB210	8.537E-09	0.00%
PB211	4.569E-13	0.00%
PB212	4.664E-09	0.00%
PB214	7.608E-14	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%

BI210	5.253E-12	0.00%
BI210M	1.663E-05	0.00%
BI211	2.696E-14	0.00%
BI212	4.424E-10	0.00%
BI213	4.031E-15	0.00%
BI214	5.649E-14	0.00%
PO210	1.451E-10	0.00%
PO211	3.308E-19	0.00%
PO212	2.341E-20	0.00%
PO213	6.047E-24	0.00%
PO214	7.772E-21	0.00%
PO215	3.826E-19	0.00%
PO216	1.861E-14	0.00%
PO218	8.822E-15	0.00%
AT217	4.843E-20	0.00%
RN219	8.670E-16	0.00%
RN220	7.026E-12	0.00%
RN222	1.622E-11	0.00%
FR221	4.398E-16	0.00%
FR223	4.020E-15	0.00%
RA223	2.202E-10	0.00%
RA224	4.068E-08	0.00%
RA225	1.988E-12	0.00%
RA226	2.524E-06	0.00%
RA228	8.692E-13	0.00%
AC225	1.343E-12	0.00%
AC227	1.558E-07	0.00%
AC228	9.073E-17	0.00%
TH227	3.619E-10	0.00%
TH228	7.905E-06	0.00%
TH229	3.664E-07	0.00%
TH230	1.814E-02	0.00%
TH231	5.297E-08	0.00%
TH232	2.645E-03	0.00%
TH234	1.388E-05	0.00%
PA231	5.453E-04	0.00%
PA233	8.317E-06	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	2.950E-04	0.00%
U233	3.210E-03	0.00%
U234	2.093E+02	0.01%
U235	1.303E+04	0.90%
U236	2.929E+03	0.20%
U237	5.738E-06	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	6.037E-15	0.00%
NP236	1.248E-04	0.00%
NP237	2.449E+02	0.02%
NP238	9.781E-08	0.00%
NP239	1.529E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	1.849E-07	0.00%
PU238	3.428E+01	0.00%
PU239	4.531E+03	0.31%
PU240	1.306E+03	0.09%
PU241	1.853E+02	0.01%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	5.988E+02	0.04%
AM242	6.240E-06	0.00%
AM242M	5.216E-01	0.00%
AM243	1.780E+01	0.00%
CM242	1.261E-03	0.00%
CM243	2.978E-02	0.00%
CM244	8.519E-01	0.00%
CM245	6.114E-02	0.00%

CM246	3.595E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	1.526E-19	0.00%
CF249	3.191E-09	0.00%
CF250	1.018E-10	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 50 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	3.331E-03	0.00%
HE 3	2.033E-02	0.00%
HE 4	2.649E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.717E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.232E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.345E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	3.859E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.359E-05	0.00%
AR 38	7.744E-04	0.00%
AR 39	8.555E-07	0.00%
K 40	2.755E-04	0.00%
K 41	5.661E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.716E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 45	3.968E-39	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%

TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	1.055E-19	0.00%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	1.510E-06	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	8.759E+01	0.01%
CO 60	7.111E-03	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.204E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	2.996E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.450E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	3.347E-25	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.634E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	1.980E-03	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.593E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	6.266E-01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.824E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 90	1.079E+02	0.01%
Y 89	2.999E+02	0.02%
Y 90	2.705E-02	0.00%
ZR 90	1.279E+05	8.88%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.266E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%

NB 93M	4.116E-03	0.00%
NB 94	3.206E+00	0.00%
MO 92	5.706E+01	0.00%
MO 93	9.912E-03	0.00%
MO 94	3.663E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.939E+02	0.03%
RU 99	8.185E-02	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RU106	1.118E-13	0.00%
RH102	1.691E-09	0.00%
RH103	3.081E+02	0.02%
RH106	1.050E-19	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.770E-02	0.00%
AG108	6.793E-13	0.00%
AG108M	2.152E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	5.437E-22	0.00%
AG110	4.339E-31	0.00%
AG110M	2.863E-23	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	5.504E-16	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD113M	1.147E-02	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.437E-01	0.00%
IN113M	7.297E-53	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN113	1.215E-49	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN119M	3.903E-23	0.00%
SN120	1.352E+03	0.09%
SN121M	3.888E-03	0.00%
SN122	1.994E+02	0.01%
SN123	1.059E-43	0.00%
SN124	2.462E+02	0.02%
SN126	1.522E+01	0.00%
SB121	5.770E+00	0.00%
SB123	5.868E+00	0.00%
SB125	3.498E-05	0.00%
SB126	7.231E-07	0.00%
SB126M	5.498E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%

TE123M	5.141E-50	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE125M	4.893E-07	0.00%
TE126	3.862E-01	0.00%
TE127	1.592E-53	0.00%
TE127M	4.549E-51	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE128	9.462E-01	0.00%
XE129	3.262E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	2.472E-06	0.00%
CS135	2.072E+02	0.01%
CS137	2.296E+02	0.02%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	4.248E-02	0.00%
BA136	7.951E+00	0.00%
BA137	5.152E+02	0.04%
BA137M	3.512E-05	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
CE144	1.375E-17	0.00%
PR141	6.934E+02	0.05%
PR144	5.806E-22	0.00%
PR144M	2.902E-24	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	4.452E-06	0.00%
PM147	2.461E-04	0.00%
SM146	2.128E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	7.936E+00	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU150	3.557E-08	0.00%
EU151	3.737E+00	0.00%
EU152	2.591E-03	0.00%
EU153	5.907E+01	0.00%
EU154	2.160E-01	0.00%
EU155	4.991E-03	0.00%
GD152	3.467E-02	0.00%
GD153	2.702E-26	0.00%
GD154	1.251E+01	0.00%
GD155	5.442E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%

DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.400E-04	0.00%
ER166	1.271E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM170	1.363E-49	0.00%
TM171	5.439E-16	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
LU177	1.524E-44	0.00%
LU177M	1.532E-42	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.885E-11	0.00%
W180	8.644E-03	0.00%
W181	7.112E-50	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	2.438E-10	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	1.224E-14	0.00%
TL206	4.315E-17	0.00%
TL207	1.111E-13	0.00%
TL208	6.538E-12	0.00%
TL209	7.984E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.262E-01	0.00%
PB209	3.327E-14	0.00%
PB210	3.260E-08	0.00%
PB211	8.590E-13	0.00%
PB212	3.856E-09	0.00%
PB214	2.030E-13	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%
BI210	2.005E-11	0.00%
BI210M	1.663E-05	0.00%
BI211	5.068E-14	0.00%
BI212	3.658E-10	0.00%
BI213	7.817E-15	0.00%
BI214	1.508E-13	0.00%
PO210	5.540E-10	0.00%
PO211	6.218E-19	0.00%
PO212	1.936E-20	0.00%
PO213	1.173E-23	0.00%
PO214	2.074E-20	0.00%
PO215	7.193E-19	0.00%
PO216	1.539E-14	0.00%

PO218	2.355E-14	0.00%
AT217	9.391E-20	0.00%
RN219	1.630E-15	0.00%
RN220	5.810E-12	0.00%
RN222	4.329E-11	0.00%
FR221	8.528E-16	0.00%
FR223	7.561E-15	0.00%
RA223	4.141E-10	0.00%
RA224	3.364E-08	0.00%
RA225	3.856E-12	0.00%
RA226	6.734E-06	0.00%
RA228	1.654E-12	0.00%
AC225	2.605E-12	0.00%
AC227	2.930E-07	0.00%
AC228	1.727E-16	0.00%
TH227	6.804E-10	0.00%
TH228	6.538E-06	0.00%
TH229	7.107E-07	0.00%
TH230	2.995E-02	0.00%
TH231	5.299E-08	0.00%
TH232	4.351E-03	0.00%
TH234	1.388E-05	0.00%
PA231	7.974E-04	0.00%
PA233	9.020E-06	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	2.435E-04	0.00%
U233	4.834E-03	0.00%
U234	2.143E+02	0.01%
U235	1.303E+04	0.90%
U236	2.932E+03	0.20%
U237	2.191E-06	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	1.693E-20	0.00%
NP236	1.248E-04	0.00%
NP237	2.656E+02	0.02%
NP238	8.929E-08	0.00%
NP239	1.527E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	1.706E-09	0.00%
PU238	2.930E+01	0.00%
PU239	4.528E+03	0.31%
PU240	1.303E+03	0.09%
PU241	7.076E+01	0.00%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	6.923E+02	0.05%
AM242	5.696E-06	0.00%
AM242M	4.762E-01	0.00%
AM243	1.777E+01	0.00%
CM242	1.152E-03	0.00%
CM243	1.831E-02	0.00%
CM244	3.962E-01	0.00%
CM245	6.103E-02	0.00%
CM246	3.584E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	2.053E-26	0.00%
CF249	3.067E-09	0.00%
CF250	3.525E-11	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

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LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 100 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	2.012E-04	0.00%
HE 3	2.154E-02	0.00%
HE 4	3.987E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.707E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.116E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.274E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	3.859E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	4.674E-05	0.00%
AR 38	7.744E-04	0.00%
AR 39	7.521E-07	0.00%
K 40	2.755E-04	0.00%
K 41	6.077E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.712E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%

V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 54	2.698E-37	0.00%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	2.455E-12	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	8.760E+01	0.01%
CO 60	9.901E-06	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.203E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	2.056E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.545E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.632E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	3.919E-03	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.593E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	2.472E-02	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.884E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 90	3.281E+01	0.00%
Y 89	2.999E+02	0.02%
Y 90	8.229E-03	0.00%
ZR 90	1.279E+05	8.88%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.265E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	4.421E-03	0.00%
NB 94	3.200E+00	0.00%

MO 92	5.706E+01	0.00%
MO 93	9.815E-03	0.00%
MO 94	3.664E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.938E+02	0.03%
RU 99	1.622E-01	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RU106	1.306E-28	0.00%
RH102	1.091E-14	0.00%
RH103	3.081E+02	0.02%
RH106	1.229E-34	0.00%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.826E-02	0.00%
AG108	5.170E-13	0.00%
AG108M	1.638E-04	0.00%
AG109	3.912E+01	0.00%
AG109M	7.714E-34	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD109	7.809E-28	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD113M	1.067E-03	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.541E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN121M	1.943E-03	0.00%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.522E+01	0.00%
SB121	5.773E+00	0.00%
SB123	5.868E+00	0.00%
SB125	1.287E-10	0.00%
SB126	7.229E-07	0.00%
SB126M	5.496E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE125M	1.801E-12	0.00%
TE126	3.915E-01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%

XE128	9.462E-01	0.00%
XE129	3.496E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	1.240E-13	0.00%
CS135	2.072E+02	0.01%
CS137	7.231E+01	0.01%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	4.563E-02	0.00%
BA136	7.951E+00	0.00%
BA137	6.725E+02	0.05%
BA137M	1.106E-05	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
CE144	6.286E-37	0.00%
PR141	6.934E+02	0.05%
PR144	2.654E-41	0.00%
PR144M	1.327E-43	0.00%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	8.165E-09	0.00%
PM147	4.507E-10	0.00%
SM146	2.130E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	5.400E+00	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU150	1.358E-08	0.00%
EU151	6.274E+00	0.00%
EU152	2.027E-04	0.00%
EU153	5.907E+01	0.00%
EU154	3.841E-03	0.00%
EU155	4.604E-06	0.00%
GD152	3.534E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.333E-04	0.00%
ER166	1.272E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM171	7.873E-24	0.00%

LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.246E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.885E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	4.838E-10	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	1.061E-14	0.00%
TL206	4.315E-17	0.00%
TL207	2.576E-13	0.00%
TL208	4.037E-12	0.00%
TL209	2.506E-17	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.263E-01	0.00%
PB209	1.044E-13	0.00%
PB210	1.900E-07	0.00%
PB211	1.992E-12	0.00%
PB212	2.381E-09	0.00%
PB214	7.945E-13	0.00%
BI208	2.337E-06	0.00%
BI209	4.000E-01	0.00%
BI210	1.169E-10	0.00%
BI210M	1.663E-05	0.00%
BI211	1.175E-13	0.00%
BI212	2.259E-10	0.00%
BI213	2.453E-14	0.00%
BI214	5.900E-13	0.00%
PO210	3.229E-09	0.00%
PO211	1.442E-18	0.00%
PO212	1.195E-20	0.00%
PO213	3.681E-23	0.00%
PO214	8.116E-20	0.00%
PO215	1.669E-18	0.00%
PO216	9.502E-15	0.00%
PO218	9.213E-14	0.00%
AT217	2.948E-19	0.00%
RN219	3.781E-15	0.00%
RN220	3.587E-12	0.00%
RN222	1.694E-10	0.00%
FR221	2.676E-15	0.00%
FR223	1.755E-14	0.00%
RA223	9.602E-10	0.00%
RA224	2.077E-08	0.00%
RA225	1.210E-11	0.00%
RA226	2.635E-05	0.00%
RA228	3.653E-12	0.00%
AC225	8.175E-12	0.00%
AC227	6.799E-07	0.00%
AC228	3.813E-16	0.00%
TH227	1.578E-09	0.00%

TH228	4.036E-06	0.00%
TH229	2.230E-06	0.00%
TH230	6.050E-02	0.00%
TH231	5.301E-08	0.00%
TH232	8.622E-03	0.00%
TH234	1.388E-05	0.00%
PA231	1.428E-03	0.00%
PA233	1.092E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	1.504E-04	0.00%
U233	9.507E-03	0.00%
U234	2.239E+02	0.02%
U235	1.304E+04	0.91%
U236	2.939E+03	0.20%
U237	1.974E-07	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP235	2.230E-34	0.00%
NP236	1.247E-04	0.00%
NP237	3.215E+02	0.02%
NP238	7.108E-08	0.00%
NP239	1.520E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	2.784E-10	0.00%
PU238	1.981E+01	0.00%
PU239	4.522E+03	0.31%
PU240	1.296E+03	0.09%
PU241	6.376E+00	0.00%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	6.999E+02	0.05%
AM242	4.535E-06	0.00%
AM242M	3.791E-01	0.00%
AM243	1.768E+01	0.00%
CM242	9.170E-04	0.00%
CM243	5.426E-03	0.00%
CM244	5.845E-02	0.00%
CM245	6.079E-02	0.00%
CM246	3.558E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.097E-07	0.00%
BK249	1.360E-43	0.00%
CF249	2.778E-09	0.00%
CF250	2.493E-12	0.00%
TOTAL	*1.440E+06	100.00%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 200 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	7.344E-07	0.00%
HE 3	2.162E-02	0.00%
HE 4	6.357E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.687E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	1.902E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.146E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	3.860E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.050E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	9.306E-05	0.00%
AR 38	7.744E-04	0.00%
AR 39	5.813E-07	0.00%
K 40	2.755E-04	0.00%
K 41	6.910E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.704E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%

V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	6.485E-24	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	8.762E+01	0.01%
CO 60	1.920E-11	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.201E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	9.676E-01	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.654E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.628E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	7.793E-03	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.589E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	3.844E-05	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 90	3.037E+00	0.00%
Y 89	2.999E+02	0.02%
Y 90	7.614E-04	0.00%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.265E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.225E+02	0.05%
NB 93M	4.447E-03	0.00%
NB 94	3.189E+00	0.00%
MO 92	5.706E+01	0.00%

MO 93	9.623E-03	0.00%
MO 94	3.665E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.937E+02	0.03%
RU 99	3.228E-01	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH102	4.545E-25	0.00%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	4.938E-02	0.00%
AG108	2.996E-13	0.00%
AG108M	9.487E-05	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD113M	9.221E-06	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN121M	4.854E-04	0.00%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.521E+01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB125	1.745E-21	0.00%
SB126	7.224E-07	0.00%
SB126M	5.492E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE125M	2.441E-23	0.00%
TE126	4.021E-01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE128	9.462E-01	0.00%
XE129	3.964E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%

XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	3.118E-28	0.00%
CS135	2.072E+02	0.01%
CS137	7.174E+00	0.00%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	5.193E-02	0.00%
BA136	7.951E+00	0.00%
BA137	7.376E+02	0.05%
BA137M	1.097E-06	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	2.746E-14	0.00%
PM147	1.511E-21	0.00%
SM146	2.130E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	2.499E+00	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU150	1.981E-09	0.00%
EU151	9.174E+00	0.00%
EU152	1.240E-06	0.00%
EU153	5.907E+01	0.00%
EU154	1.214E-06	0.00%
EU155	3.918E-12	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.202E-04	0.00%
ER166	1.274E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM171	1.649E-39	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%

HF182	8.245E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.885E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	9.639E-10	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	7.955E-15	0.00%
TL206	4.315E-17	0.00%
TL207	5.666E-13	0.00%
TL208	1.541E-12	0.00%
TL209	9.791E-17	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.264E-01	0.00%
PB209	4.080E-13	0.00%
PB210	9.946E-07	0.00%
PB211	4.383E-12	0.00%
PB212	9.092E-10	0.00%
PB214	3.175E-12	0.00%
BI208	2.336E-06	0.00%
BI209	4.000E-01	0.00%
BI210	6.119E-10	0.00%
BI210M	1.663E-05	0.00%
BI211	2.586E-13	0.00%
BI212	8.625E-11	0.00%
BI213	9.586E-14	0.00%
BI214	2.358E-12	0.00%
PO210	1.690E-08	0.00%
PO211	3.173E-18	0.00%
PO212	4.563E-21	0.00%
PO213	1.438E-22	0.00%
PO214	3.243E-19	0.00%
PO215	3.671E-18	0.00%
PO216	3.628E-15	0.00%
PO218	3.681E-13	0.00%
AT217	1.152E-18	0.00%
RN219	8.318E-15	0.00%
RN220	1.370E-12	0.00%
RN222	6.768E-10	0.00%
FR221	1.046E-14	0.00%
FR223	3.860E-14	0.00%
RA223	2.113E-09	0.00%
RA224	7.932E-09	0.00%
RA225	4.729E-11	0.00%
RA226	1.053E-04	0.00%
RA228	8.057E-12	0.00%
AC225	3.194E-11	0.00%
AC227	1.496E-06	0.00%
AC228	8.411E-16	0.00%
TH227	3.472E-09	0.00%
TH228	1.541E-06	0.00%
TH229	8.714E-06	0.00%
TH230	1.245E-01	0.00%
TH231	5.307E-08	0.00%
TH232	1.719E-02	0.00%
TH234	1.388E-05	0.00%
PA231	2.686E-03	0.00%
PA233	1.441E-05	0.00%

PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	5.746E-05	0.00%
U233	2.141E-02	0.00%
U234	2.347E+02	0.02%
U235	1.305E+04	0.91%
U236	2.952E+03	0.21%
U237	1.605E-09	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP236	1.247E-04	0.00%
NP237	4.243E+02	0.03%
NP238	4.505E-08	0.00%
NP239	1.505E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	2.782E-10	0.00%
PU238	9.065E+00	0.00%
PU239	4.509E+03	0.31%
PU240	1.283E+03	0.09%
PU241	5.186E-02	0.00%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	6.018E+02	0.04%
AM242	2.874E-06	0.00%
AM242M	2.403E-01	0.00%
AM243	1.752E+01	0.00%
CM242	5.812E-04	0.00%
CM243	4.767E-04	0.00%
CM244	1.272E-03	0.00%
CM245	6.030E-02	0.00%
CM246	3.506E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.096E-07	0.00%
CF249	2.280E-09	0.00%
CF250	1.245E-14	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 300 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	2.681E-09	0.00%
HE 3	2.162E-02	0.00%
HE 4	8.370E+00	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.028E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.666E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	1.709E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.030E-13	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	3.861E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.050E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.393E-04	0.00%
AR 38	7.744E-04	0.00%
AR 39	4.492E-07	0.00%
K 40	2.755E-04	0.00%
K 41	7.740E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.695E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%

V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 55	1.713E-35	0.00%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	8.764E+01	0.01%
CO 60	3.723E-17	0.00%
NI 58	7.278E+03	0.51%
NI 59	2.199E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	4.555E-01	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.705E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.624E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	1.166E-02	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.587E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	5.981E-08	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.379E-03	0.00%
SR 88	2.292E+02	0.02%
SR 90	2.810E-01	0.00%
Y 89	2.999E+02	0.02%
Y 90	7.045E-05	0.00%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.265E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.226E+02	0.05%
NB 93M	4.447E-03	0.00%
NB 94	3.178E+00	0.00%
MO 92	5.706E+01	0.00%

MO 93	9.434E-03	0.00%
MO 94	3.666E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.935E+02	0.03%
RU 99	4.835E-01	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH102	1.894E-35	0.00%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	5.049E-02	0.00%
AG108	1.736E-13	0.00%
AG108M	5.497E-05	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD113M	7.969E-08	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN121M	1.213E-04	0.00%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.520E+01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB125	2.364E-32	0.00%
SB126	7.219E-07	0.00%
SB126M	5.488E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE125M	3.307E-34	0.00%
TE126	4.125E-01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE128	9.462E-01	0.00%
XE129	4.431E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%

XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS134	7.844E-43	0.00%
CS135	2.072E+02	0.01%
CS137	7.117E-01	0.00%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	5.822E-02	0.00%
BA136	7.951E+00	0.00%
BA137	7.441E+02	0.05%
BA137M	1.089E-07	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	9.235E-20	0.00%
PM147	5.067E-33	0.00%
SM146	2.130E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	1.157E+00	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU150	2.887E-10	0.00%
EU151	1.051E+01	0.00%
EU152	7.587E-09	0.00%
EU153	5.907E+01	0.00%
EU154	3.836E-10	0.00%
EU155	3.333E-18	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.078E-04	0.00%
ER166	1.275E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
TM171	3.456E-55	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%

HF182	8.245E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.885E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	1.444E-09	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	5.967E-15	0.00%
TL206	4.315E-17	0.00%
TL207	8.776E-13	0.00%
TL208	5.888E-13	0.00%
TL209	2.348E-16	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.264E-01	0.00%
PB209	9.783E-13	0.00%
PB210	2.483E-06	0.00%
PB211	6.789E-12	0.00%
PB212	3.473E-10	0.00%
PB214	7.155E-12	0.00%
BI208	2.336E-06	0.00%
BI209	4.000E-01	0.00%
BI210	1.528E-09	0.00%
BI210M	1.663E-05	0.00%
BI211	4.006E-13	0.00%
BI212	3.294E-11	0.00%
BI213	2.299E-13	0.00%
BI214	5.313E-12	0.00%
PO210	4.220E-08	0.00%
PO211	4.915E-18	0.00%
PO212	1.743E-21	0.00%
PO213	3.449E-22	0.00%
PO214	7.309E-19	0.00%
PO215	5.685E-18	0.00%
PO216	1.386E-15	0.00%
PO218	8.297E-13	0.00%
AT217	2.762E-18	0.00%
RN219	1.288E-14	0.00%
RN220	5.231E-13	0.00%
RN222	1.526E-09	0.00%
FR221	2.508E-14	0.00%
FR223	5.979E-14	0.00%
RA223	3.273E-09	0.00%
RA224	3.029E-09	0.00%
RA225	1.134E-10	0.00%
RA226	2.373E-04	0.00%
RA228	1.209E-11	0.00%
AC225	7.660E-11	0.00%
AC227	2.317E-06	0.00%
AC228	1.263E-15	0.00%
TH227	5.378E-09	0.00%
TH228	5.887E-07	0.00%
TH229	2.090E-05	0.00%
TH230	1.905E-01	0.00%
TH231	5.312E-08	0.00%
TH232	2.581E-02	0.00%
TH234	1.388E-05	0.00%
PA231	3.943E-03	0.00%
PA233	1.739E-05	0.00%

PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	2.195E-05	0.00%
U233	3.635E-02	0.00%
U234	2.397E+02	0.02%
U235	1.307E+04	0.91%
U236	2.966E+03	0.21%
U237	1.620E-11	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP236	1.246E-04	0.00%
NP237	5.121E+02	0.04%
NP238	2.855E-08	0.00%
NP239	1.491E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	2.781E-10	0.00%
PU238	4.162E+00	0.00%
PU239	4.496E+03	0.31%
PU240	1.269E+03	0.09%
PU241	5.234E-04	0.00%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	5.127E+02	0.04%
AM242	1.822E-06	0.00%
AM242M	1.523E-01	0.00%
AM243	1.735E+01	0.00%
CM242	3.684E-04	0.00%
CM243	4.189E-05	0.00%
CM244	2.768E-05	0.00%
CM245	5.981E-02	0.00%
CM246	3.455E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.095E-07	0.00%
CF249	1.870E-09	0.00%
CF250	6.233E-17	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 500 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	3.570E-14	0.00%
HE 3	2.162E-02	0.00%
HE 4	1.165E+01	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.027E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.627E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	1.381E-09	0.00%
P 31	1.845E+02	0.01%
P 32	8.319E-14	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	3.863E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.049E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.320E-04	0.00%
AR 38	7.744E-04	0.00%
AR 39	2.683E-07	0.00%
K 40	2.755E-04	0.00%
K 41	9.399E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.679E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%

V	50	2.935E-02 0.00%
V	51	1.103E+01 0.00%
CR	50	3.904E+02 0.03%
CR	52	7.871E+03 0.55%
CR	53	9.108E+02 0.06%
CR	54	2.385E+02 0.02%
MN	55	7.112E+02 0.05%
FE	54	1.494E+03 0.10%
FE	56	2.447E+04 1.70%
FE	57	6.045E+02 0.04%
FE	58	8.155E+01 0.01%
CO	59	8.767E+01 0.01%
CO	60	1.399E-28 0.00%
NI	58	7.278E+03 0.51%
NI	59	2.196E+01 0.00%
NI	60	2.889E+03 0.20%
NI	61	1.332E+02 0.01%
NI	62	4.064E+02 0.03%
NI	63	1.009E-01 0.00%
NI	64	1.074E+02 0.01%
CU	63	1.740E+01 0.00%
CU	65	6.191E+00 0.00%
ZN	64	1.915E+01 0.00%
ZN	66	1.134E+01 0.00%
ZN	67	1.681E+00 0.00%
ZN	68	7.868E+00 0.00%
ZN	70	2.699E-01 0.00%
GA	69	1.776E-02 0.00%
GA	71	3.101E-05 0.00%
GE	70	6.209E-05 0.00%
GE	72	1.190E-02 0.00%
GE	73	2.614E-02 0.00%
GE	74	5.674E-02 0.00%
GE	76	3.090E-01 0.00%
AS	75	1.218E-01 0.00%
SE	76	1.968E-03 0.00%
SE	77	6.535E-01 0.00%
SE	78	1.466E+00 0.00%
SE	79	3.617E+00 0.00%
SE	80	8.338E+00 0.00%
SE	82	2.138E+01 0.00%
BR	79	1.939E-02 0.00%
BR	81	1.385E+01 0.00%
KR	80	1.178E-04 0.00%
KR	81	8.580E-06 0.00%
KR	82	3.738E-01 0.00%
KR	83	2.962E+01 0.00%
KR	84	6.945E+01 0.00%
KR	85	1.447E-13 0.00%
KR	86	1.239E+02 0.01%
RB	85	7.886E+01 0.01%
RB	87	1.595E+02 0.01%
SR	86	1.512E-01 0.00%
SR	87	2.380E-03 0.00%
SR	88	2.292E+02 0.02%
SR	90	2.406E-03 0.00%
Y	89	2.999E+02 0.02%
Y	90	6.032E-07 0.00%
ZR	90	1.280E+05 8.89%
ZR	91	2.838E+04 1.97%
ZR	92	4.377E+04 3.04%
ZR	93	5.265E+02 0.04%
ZR	94	4.549E+04 3.16%
ZR	96	7.879E+03 0.55%
NB	93	7.226E+02 0.05%
NB	93M	4.447E-03 0.00%
NB	94	3.156E+00 0.00%
MO	92	5.706E+01 0.00%
MO	93	9.067E-03 0.00%

MO 94	3.668E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.932E+02	0.03%
RU 99	8.045E-01	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH102	3.285E-56	0.00%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	5.272E-02	0.00%
AG108	5.827E-14	0.00%
AG108M	1.845E-05	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD113M	5.952E-12	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN121M	7.567E-06	0.00%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.517E+01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	7.208E-07	0.00%
SB126M	5.481E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	4.336E-01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE128	9.462E-01	0.00%
XE129	5.364E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%

CS135	2.072E+02	0.01%
CS137	7.005E-03	0.00%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	7.079E-02	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA137M	1.071E-09	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
PM146	1.044E-30	0.00%
SM146	2.130E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	2.479E-01	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU150	6.140E-12	0.00%
EU151	1.143E+01	0.00%
EU152	2.840E-13	0.00%
EU153	5.907E+01	0.00%
EU154	3.831E-17	0.00%
EU155	2.413E-30	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	1.850E-04	0.00%
ER166	1.277E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.245E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.885E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%

W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	2.405E-09	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	3.357E-15	0.00%
TL206	4.315E-17	0.00%
TL207	1.499E-12	0.00%
TL208	8.600E-14	0.00%
TL209	7.500E-16	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.284E-01	0.00%
PB208	5.264E-01	0.00%
PB209	3.125E-12	0.00%
PB210	7.475E-06	0.00%
PB211	1.159E-11	0.00%
PB212	5.072E-11	0.00%
PB214	1.977E-11	0.00%
BI208	2.335E-06	0.00%
BI209	4.000E-01	0.00%
BI210	4.600E-09	0.00%
BI210M	1.663E-05	0.00%
BI211	6.840E-13	0.00%
BI212	4.812E-12	0.00%
BI213	7.342E-13	0.00%
BI214	1.468E-11	0.00%
PO210	1.270E-07	0.00%
PO211	8.392E-18	0.00%
PO212	2.545E-22	0.00%
PO213	1.101E-21	0.00%
PO214	2.019E-18	0.00%
PO215	9.708E-18	0.00%
PO216	2.024E-16	0.00%
PO218	2.292E-12	0.00%
AT217	8.821E-18	0.00%
RN219	2.200E-14	0.00%
RN220	7.642E-14	0.00%
RN222	4.215E-09	0.00%
FR221	8.010E-14	0.00%
FR223	1.021E-13	0.00%
RA223	5.588E-09	0.00%
RA224	4.425E-10	0.00%
RA225	3.622E-10	0.00%
RA226	6.557E-04	0.00%
RA228	2.021E-11	0.00%
AC225	2.447E-10	0.00%
AC227	3.956E-06	0.00%
AC228	2.111E-15	0.00%
TH227	9.182E-09	0.00%
TH228	8.599E-08	0.00%
TH229	6.675E-05	0.00%
TH230	3.248E-01	0.00%
TH231	5.322E-08	0.00%
TH232	4.314E-02	0.00%
TH234	1.388E-05	0.00%
PA231	6.453E-03	0.00%
PA233	2.209E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	3.205E-06	0.00%
U233	7.356E-02	0.00%
U234	2.429E+02	0.02%
U235	1.309E+04	0.91%

U236	2.992E+03	0.21%
U237	3.038E-12	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP236	1.245E-04	0.00%
NP237	6.505E+02	0.05%
NP238	1.147E-08	0.00%
NP239	1.464E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	2.778E-10	0.00%
PU238	8.906E-01	0.00%
PU239	4.470E+03	0.31%
PU240	1.242E+03	0.09%
PU241	9.826E-05	0.00%
PU242	1.583E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	3.720E+02	0.03%
AM242	7.318E-07	0.00%
AM242M	6.118E-02	0.00%
AM243	1.703E+01	0.00%
CM242	1.480E-04	0.00%
CM243	3.233E-07	0.00%
CM244	1.312E-08	0.00%
CM245	5.884E-02	0.00%
CM246	3.355E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.092E-07	0.00%
CF249	1.260E-09	0.00%
CF250	1.075E-19	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 1000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
H 3	2.313E-26	0.00%
HE 3	2.162E-02	0.00%
HE 4	1.724E+01	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.027E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.531E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	8.103E-10	0.00%
P 31	1.845E+02	0.01%
P 32	4.881E-14	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	3.867E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.046E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	4.632E-04	0.00%
AR 38	7.744E-04	0.00%
AR 39	7.398E-08	0.00%
K 40	2.755E-04	0.00%
K 41	1.353E-05	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.637E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%

V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	8.776E+01	0.01%
NI 58	7.278E+03	0.51%
NI 59	2.186E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	2.334E-03	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.597E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	3.864E-02	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.566E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 85	1.319E-27	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.381E-03	0.00%
SR 88	2.292E+02	0.02%
SR 90	1.632E-08	0.00%
Y 89	2.999E+02	0.02%
Y 90	4.092E-12	0.00%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.264E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.227E+02	0.05%
NB 93M	4.445E-03	0.00%
NB 94	3.103E+00	0.00%
MO 92	5.706E+01	0.00%
MO 93	8.211E-03	0.00%
MO 94	3.673E+01	0.00%

MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.583E-03	0.00%
TC 99	4.924E+02	0.03%
RU 99	1.607E+00	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	5.827E-02	0.00%
AG108	3.805E-15	0.00%
AG108M	1.205E-06	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD113M	2.869E-22	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN121M	7.361E-09	0.00%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.512E+01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	7.184E-07	0.00%
SB126M	5.462E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	4.861E-01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE128	9.462E-01	0.00%
XE129	7.692E-03	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	2.072E+02	0.01%
CS137	6.731E-08	0.00%

BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	1.021E-01	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA137M	1.029E-14	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.130E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	5.270E-03	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU150	4.047E-16	0.00%
EU151	1.167E+01	0.00%
EU152	2.435E-24	0.00%
EU153	5.907E+01	0.00%
EU154	1.207E-34	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	1.386E-04	0.00%
ER166	1.281E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.245E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.885E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%

OS186	2.828E-03	0.00%
OS187	4.806E-09	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	7.968E-16	0.00%
TL206	4.314E-17	0.00%
TL207	3.142E-12	0.00%
TL208	8.866E-16	0.00%
TL209	3.832E-15	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.320E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.264E-01	0.00%
PB209	1.597E-11	0.00%
PB210	3.254E-05	0.00%
PB211	2.432E-11	0.00%
PB212	5.229E-13	0.00%
PB214	7.579E-11	0.00%
BI208	2.332E-06	0.00%
BI209	4.000E-01	0.00%
BI210	2.002E-08	0.00%
BI210M	1.663E-05	0.00%
BI211	1.435E-12	0.00%
BI212	4.960E-14	0.00%
BI213	3.752E-12	0.00%
BI214	5.627E-11	0.00%
PO210	5.530E-07	0.00%
PO211	1.760E-17	0.00%
PO212	2.624E-24	0.00%
PO213	5.629E-21	0.00%
PO214	7.742E-18	0.00%
PO215	2.036E-17	0.00%
PO216	2.087E-18	0.00%
PO218	8.789E-12	0.00%
AT217	4.508E-17	0.00%
RN219	4.614E-14	0.00%
RN220	7.878E-16	0.00%
RN222	1.615E-08	0.00%
FR221	4.093E-13	0.00%
FR223	2.141E-13	0.00%
RA223	1.172E-08	0.00%
RA224	4.562E-12	0.00%
RA225	1.851E-09	0.00%
RA226	2.514E-03	0.00%
RA228	4.084E-11	0.00%
AC225	1.250E-09	0.00%
AC227	8.297E-06	0.00%
AC228	4.263E-15	0.00%
TH227	1.926E-08	0.00%
TH228	8.864E-10	0.00%
TH229	3.411E-04	0.00%
TH230	6.617E-01	0.00%
TH231	5.348E-08	0.00%
TH232	8.714E-02	0.00%
TH234	1.388E-05	0.00%
PA231	1.270E-02	0.00%
PA233	2.894E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	3.278E-08	0.00%
U233	1.950E-01	0.00%
U234	2.435E+02	0.02%
U235	1.315E+04	0.91%
U236	3.055E+03	0.21%
U237	2.916E-12	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%

NP236	1.241E-04	0.00%
NP237	8.522E+02	0.06%
NP238	1.174E-09	0.00%
NP239	1.397E-05	0.00%
NP240M	5.192E-16	0.00%
PU236	2.769E-10	0.00%
PU238	2.280E-02	0.00%
PU239	4.408E+03	0.31%
PU240	1.179E+03	0.08%
PU241	9.430E-05	0.00%
PU242	1.581E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	1.668E+02	0.01%
AM242	7.486E-08	0.00%
AM242M	6.258E-03	0.00%
AM243	1.624E+01	0.00%
CM242	1.514E-05	0.00%
CM243	1.692E-12	0.00%
CM244	6.809E-14	0.00%
CM245	5.649E-02	0.00%
CM246	3.118E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.087E-07	0.00%
CF249	4.686E-10	0.00%
CF250	1.039E-19	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 2000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
HE 3	2.162E-02	0.00%
HE 4	2.357E+01	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.027E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.356E-01	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.789E-10	0.00%
P 31	1.845E+02	0.01%
P 32	1.681E-14	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	3.877E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.041E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	9.249E-04	0.00%
AR 38	7.744E-04	0.00%
AR 39	5.624E-09	0.00%
K 40	2.755E-04	0.00%
K 41	2.175E-05	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.555E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%

V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	8.796E+01	0.01%
NI 58	7.278E+03	0.51%
NI 59	2.167E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	1.247E-06	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.559E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	7.682E-02	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.539E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.383E-03	0.00%
SR 88	2.292E+02	0.02%
SR 90	7.509E-19	0.00%
Y 89	2.999E+02	0.02%
Y 90	1.883E-22	0.00%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.261E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.230E+02	0.05%
NB 93M	4.444E-03	0.00%
NB 94	2.999E+00	0.00%
MO 92	5.706E+01	0.00%
MO 93	6.736E-03	0.00%
MO 94	3.684E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%

MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.582E-03	0.00%
TC 99	4.908E+02	0.03%
RU 99	3.206E+00	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	6.940E-02	0.00%
AG108	1.622E-17	0.00%
AG108M	5.138E-09	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD113M	6.669E-43	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN121M	6.966E-15	0.00%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.501E+01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	7.134E-07	0.00%
SB126M	5.424E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	5.906E-01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE128	9.462E-01	0.00%
XE129	1.234E-02	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	2.071E+02	0.01%
CS137	6.215E-18	0.00%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%

BA135	1.646E-01	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA137M	9.507E-25	0.00%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.130E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	2.381E-06	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU150	1.759E-24	0.00%
EU151	1.168E+01	0.00%
EU153	5.907E+01	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	7.782E-05	0.00%
ER166	1.288E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.243E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.884E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	9.607E-09	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%

OS190	3.655E-05	0.00%
IR192	4.491E-17	0.00%
TL206	4.313E-17	0.00%
TL207	6.210E-12	0.00%
TL208	2.024E-16	0.00%
TL209	1.925E-14	0.00%
PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.343E-01	0.00%
PB207	2.288E-01	0.00%
PB208	5.264E-01	0.00%
PB209	8.023E-11	0.00%
PB210	1.160E-04	0.00%
PB211	4.803E-11	0.00%
PB212	1.194E-13	0.00%
PB214	2.701E-10	0.00%
BI208	2.328E-06	0.00%
BI209	4.001E-01	0.00%
BI210	7.136E-08	0.00%
BI210M	1.663E-05	0.00%
BI211	2.834E-12	0.00%
BI212	1.133E-14	0.00%
BI213	1.885E-11	0.00%
BI214	2.006E-10	0.00%
PO210	1.971E-06	0.00%
PO211	3.477E-17	0.00%
PO212	5.991E-25	0.00%
PO213	2.828E-20	0.00%
PO214	2.759E-17	0.00%
PO215	4.023E-17	0.00%
PO216	4.764E-19	0.00%
PO218	3.132E-11	0.00%
AT217	2.265E-16	0.00%
RN219	9.115E-14	0.00%
RN220	1.798E-16	0.00%
RN222	5.758E-08	0.00%
FR221	2.056E-12	0.00%
FR223	4.231E-13	0.00%
RA223	2.316E-08	0.00%
RA224	1.041E-12	0.00%
RA225	9.298E-09	0.00%
RA226	8.957E-03	0.00%
RA228	8.332E-11	0.00%
AC225	6.282E-09	0.00%
AC227	1.639E-05	0.00%
AC228	8.697E-15	0.00%
TH227	3.805E-08	0.00%
TH228	2.024E-10	0.00%
TH229	1.714E-03	0.00%
TH230	1.330E+00	0.00%
TH231	5.399E-08	0.00%
TH232	1.778E-01	0.00%
TH234	1.388E-05	0.00%
PA231	2.509E-02	0.00%
PA233	3.339E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	6.835E-09	0.00%
U233	4.911E-01	0.00%
U234	2.430E+02	0.02%
U235	1.328E+04	0.92%
U236	3.173E+03	0.22%
U237	2.688E-12	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP236	1.234E-04	0.00%
NP237	9.829E+02	0.07%
NP238	1.228E-11	0.00%
NP239	1.271E-05	0.00%

NP240M	5.191E-16	0.00%
PU236	2.752E-10	0.00%
PU238	3.923E-05	0.00%
PU239	4.284E+03	0.30%
PU240	1.060E+03	0.07%
PU241	8.691E-05	0.00%
PU242	1.579E+02	0.01%
PU243	6.430E-16	0.00%
PU244	3.103E-03	0.00%
AM241	3.356E+01	0.00%
AM242	7.832E-10	0.00%
AM242M	6.547E-05	0.00%
AM243	1.480E+01	0.00%
CM242	1.583E-07	0.00%
CM243	4.635E-23	0.00%
CM244	6.803E-14	0.00%
CM245	5.206E-02	0.00%
CM246	2.693E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.078E-07	0.00%
CF249	6.483E-11	0.00%
CF250	9.982E-20	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 5000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
HE 3	2.162E-02	0.00%
HE 4	3.503E+01	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.025E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	9.436E-02	0.00%
N 14	1.063E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	1.138E-11	0.00%
P 31	1.845E+02	0.01%
P 32	6.855E-16	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	3.903E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.027E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.304E-03	0.00%
AR 38	7.744E-04	0.00%
AR 39	2.471E-12	0.00%
K 40	2.755E-04	0.00%
K 41	4.597E-05	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.314E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%

V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	8.852E+01	0.01%
NI 58	7.278E+03	0.51%
NI 59	2.112E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	1.905E-16	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.448E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	1.889E-01	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.454E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.391E-03	0.00%
SR 88	2.292E+02	0.02%
Y 89	2.999E+02	0.02%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.254E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.237E+02	0.05%
NB 93M	4.437E-03	0.00%
NB 94	2.707E+00	0.00%
MO 92	5.706E+01	0.00%
MO 93	3.718E-03	0.00%
MO 94	3.713E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%

MO100	6.025E+02	0.04%
TC 98	1.582E-03	0.00%
TC 99	4.860E+02	0.03%
RU 99	7.973E+00	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.039E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	1.028E-01	0.00%
AG108	1.258E-24	0.00%
AG108M	3.983E-16	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN121M	5.903E-33	0.00%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.471E+01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	6.987E-07	0.00%
SB126M	5.313E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	8.996E-01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.053E+02	0.01%
XE128	9.462E-01	0.00%
XE129	2.629E-02	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	2.069E+02	0.01%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	3.520E-01	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA138	7.843E+02	0.05%

LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.130E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	2.197E-16	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU151	1.168E+01	0.00%
EU153	5.907E+01	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	1.375E-05	0.00%
ER166	1.294E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.242E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.884E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	2.401E-08	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	8.036E-21	0.00%
TL206	4.311E-17	0.00%
TL207	1.520E-11	0.00%
TL208	2.381E-16	0.00%
TL209	1.392E-13	0.00%

PB204	1.376E-02	0.00%
PB205	1.755E-05	0.00%
PB206	2.620E-01	0.00%
PB207	2.313E-01	0.00%
PB208	5.264E-01	0.00%
PB209	5.799E-10	0.00%
PB210	5.168E-04	0.00%
PB211	1.176E-10	0.00%
PB212	1.404E-13	0.00%
PB214	1.204E-09	0.00%
BI208	2.315E-06	0.00%
BI209	4.018E-01	0.00%
BI210	3.180E-07	0.00%
BI210M	1.662E-05	0.00%
BI211	6.937E-12	0.00%
BI212	1.332E-14	0.00%
BI213	1.363E-10	0.00%
BI214	8.938E-10	0.00%
PO210	8.783E-06	0.00%
PO211	8.511E-17	0.00%
PO212	7.048E-25	0.00%
PO213	2.045E-19	0.00%
PO214	1.230E-16	0.00%
PO215	9.848E-17	0.00%
PO216	5.603E-19	0.00%
PO218	1.396E-10	0.00%
AT217	1.637E-15	0.00%
RN219	2.231E-13	0.00%
RN220	2.116E-16	0.00%
RN222	2.566E-07	0.00%
FR221	1.486E-11	0.00%
FR223	1.035E-12	0.00%
RA223	5.667E-08	0.00%
RA224	1.225E-12	0.00%
RA225	6.721E-08	0.00%
RA226	3.992E-02	0.00%
RA228	2.192E-10	0.00%
AC225	4.540E-08	0.00%
AC227	4.012E-05	0.00%
AC228	2.289E-14	0.00%
TH227	9.312E-08	0.00%
TH228	2.381E-10	0.00%
TH229	1.239E-02	0.00%
TH230	3.292E+00	0.00%
TH231	5.543E-08	0.00%
TH232	4.679E-01	0.00%
TH234	1.388E-05	0.00%
PA231	6.143E-02	0.00%
PA233	3.446E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	6.710E-09	0.00%
U233	1.442E+00	0.00%
U234	2.413E+02	0.02%
U235	1.363E+04	0.95%
U236	3.457E+03	0.24%
U237	2.104E-12	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP236	1.211E-04	0.00%
NP237	1.015E+03	0.07%
NP238	1.406E-17	0.00%
NP239	9.590E-06	0.00%
NP240M	5.191E-16	0.00%
PU236	2.703E-10	0.00%
PU238	8.360E-11	0.00%
PU239	3.933E+03	0.27%
PU240	7.710E+02	0.05%
PU241	6.805E-05	0.00%

PU242	1.570E+02	0.01%
PU243	6.429E-16	0.00%
PU244	3.103E-03	0.00%
AM241	2.754E-01	0.00%
AM242	8.971E-16	0.00%
AM242M	7.499E-11	0.00%
AM243	1.116E+01	0.00%
CM242	1.819E-13	0.00%
CM244	6.803E-14	0.00%
CM245	4.076E-02	0.00%
CM246	1.735E-03	0.00%
CM247	1.804E-05	0.00%
CM248	5.046E-07	0.00%
CF249	1.718E-13	0.00%
CF250	8.858E-20	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 10000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
HE 3	2.162E-02	0.00%
HE 4	4.938E+01	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.023E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	5.152E-02	0.00%
N 14	1.064E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	5.502E-14	0.00%
P 31	1.845E+02	0.01%
P 32	3.315E-18	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	3.948E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.004E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	4.580E-03	0.00%
AR 38	7.744E-04	0.00%
AR 39	6.273E-18	0.00%
K 40	2.755E-04	0.00%
K 41	8.498E-05	0.00%
CA 40	1.932E+00	0.00%
CA 41	8.923E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%

V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	8.941E+01	0.01%
NI 58	7.278E+03	0.51%
NI 59	2.022E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 63	8.308E-33	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	3.268E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	3.680E-01	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.316E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.402E-03	0.00%
SR 88	2.292E+02	0.02%
Y 89	2.999E+02	0.02%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.242E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.249E+02	0.05%
NB 93M	4.427E-03	0.00%
NB 94	2.282E+00	0.00%
MO 92	5.706E+01	0.00%
MO 93	1.380E-03	0.00%
MO 94	3.756E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%

MO100	6.025E+02	0.04%
TC 98	1.580E-03	0.00%
TC 99	4.782E+02	0.03%
RU 99	1.582E+01	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.038E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	1.581E-01	0.00%
AG108	1.772E-36	0.00%
AG108M	5.613E-28	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.421E+01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	6.749E-07	0.00%
SB126M	5.131E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	1.400E+00	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.052E+02	0.01%
XE128	9.462E-01	0.00%
XE129	4.952E-02	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	2.066E+02	0.01%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	6.636E-01	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%

LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.129E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM151	4.138E-33	0.00%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU151	1.168E+01	0.00%
EU153	5.907E+01	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	7.661E-07	0.00%
ER166	1.295E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.240E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.882E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	4.802E-08	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	4.567E-27	0.00%
TL206	4.306E-17	0.00%
TL207	2.947E-11	0.00%
TL208	3.036E-16	0.00%
TL209	5.274E-13	0.00%
PB204	1.376E-02	0.00%

PB205	1.755E-05	0.00%
PB206	4.021E-01	0.00%
PB207	2.399E-01	0.00%
PB208	5.264E-01	0.00%
PB209	2.198E-09	0.00%
PB210	1.322E-03	0.00%
PB211	2.281E-10	0.00%
PB212	1.791E-13	0.00%
PB214	3.077E-09	0.00%
BI208	2.293E-06	0.00%
BI209	4.139E-01	0.00%
BI210	8.130E-07	0.00%
BI210M	1.660E-05	0.00%
BI211	1.345E-11	0.00%
BI212	1.699E-14	0.00%
BI213	5.163E-10	0.00%
BI214	2.285E-09	0.00%
PO210	2.246E-05	0.00%
PO211	1.651E-16	0.00%
PO212	8.987E-25	0.00%
PO213	7.747E-19	0.00%
PO214	3.144E-16	0.00%
PO215	1.909E-16	0.00%
PO216	7.146E-19	0.00%
PO218	3.568E-10	0.00%
AT217	6.204E-15	0.00%
RN219	4.327E-13	0.00%
RN220	2.698E-16	0.00%
RN222	6.560E-07	0.00%
FR221	5.633E-11	0.00%
FR223	2.008E-12	0.00%
RA223	1.099E-07	0.00%
RA224	1.562E-12	0.00%
RA225	2.547E-07	0.00%
RA226	1.021E-01	0.00%
RA228	4.666E-10	0.00%
AC225	1.720E-07	0.00%
AC227	7.782E-05	0.00%
AC228	4.871E-14	0.00%
TH227	1.806E-07	0.00%
TH228	3.036E-10	0.00%
TH229	4.694E-02	0.00%
TH230	6.417E+00	0.00%
TH231	5.757E-08	0.00%
TH232	9.961E-01	0.00%
TH234	1.388E-05	0.00%
PA231	1.191E-01	0.00%
PA233	3.442E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	6.512E-09	0.00%
U233	3.008E+00	0.00%
U234	2.387E+02	0.02%
U235	1.416E+04	0.98%
U236	3.770E+03	0.26%
U237	1.400E-12	0.00%
U238	9.559E+05	66.38%
U240	5.935E-14	0.00%
NP236	1.176E-04	0.00%
NP237	1.013E+03	0.07%
NP238	1.763E-27	0.00%
NP239	5.996E-06	0.00%
NP240M	5.191E-16	0.00%
PU236	2.623E-10	0.00%
PU238	1.048E-20	0.00%
PU239	3.409E+03	0.24%
PU240	4.538E+02	0.03%
PU241	4.526E-05	0.00%
PU242	1.556E+02	0.01%

PU243	6.428E-16	0.00%
PU244	3.103E-03	0.00%
AM241	1.452E-03	0.00%
AM242	1.125E-25	0.00%
AM242M	9.401E-21	0.00%
AM243	6.977E+00	0.00%
CM242	2.281E-23	0.00%
CM244	6.802E-14	0.00%
CM245	2.711E-02	0.00%
CM246	8.341E-04	0.00%
CM247	1.802E-05	0.00%
CM248	4.994E-07	0.00%
CF249	8.717E-18	0.00%
CF250	7.259E-20	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 20000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
HE 3	2.162E-02	0.00%
HE 4	6.905E+01	0.00%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.019E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	1.537E-02	0.00%
N 14	1.064E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	1.286E-18	0.00%
P 31	1.845E+02	0.01%
P 32	7.747E-23	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	4.034E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	1.959E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	9.055E-03	0.00%
AR 38	7.744E-04	0.00%
AR 39	4.044E-29	0.00%
K 40	2.755E-04	0.00%
K 41	1.582E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	8.192E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%

V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	9.109E+01	0.01%
NI 58	7.278E+03	0.51%
NI 59	1.854E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	2.938E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	6.988E-01	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	8.045E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.426E-03	0.00%
SR 88	2.292E+02	0.02%
Y 89	2.999E+02	0.02%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.219E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.273E+02	0.05%
NB 93M	4.408E-03	0.00%
NB 94	1.622E+00	0.00%
MO 92	5.706E+01	0.00%
MO 93	1.903E-04	0.00%
MO 94	3.822E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%

TC 98	1.578E-03	0.00%
TC 99	4.628E+02	0.03%
RU 99	3.112E+01	0.00%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.037E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	2.689E-01	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.326E+01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	6.297E-07	0.00%
SB126M	4.788E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	2.352E+00	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.052E+02	0.01%
XE128	9.462E-01	0.00%
XE129	9.597E-02	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	2.061E+02	0.01%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	1.285E+00	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%

PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.129E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU151	1.168E+01	0.00%
EU153	5.907E+01	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.376E-09	0.00%
ER166	1.295E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.233E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.880E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	9.603E-08	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
IR192	1.475E-39	0.00%
TL206	4.295E-17	0.00%
TL207	5.541E-11	0.00%
TL208	4.473E-16	0.00%
TL209	1.694E-12	0.00%
PB204	1.376E-02	0.00%
PB205	1.754E-05	0.00%
PB206	1.047E+00	0.00%
PB207	2.729E-01	0.00%
PB208	5.264E-01	0.00%

PB209	7.060E-09	0.00%
PB210	2.873E-03	0.00%
PB211	4.287E-10	0.00%
PB212	2.638E-13	0.00%
PB214	6.692E-09	0.00%
BI208	2.251E-06	0.00%
BI209	4.971E-01	0.00%
BI210	1.768E-06	0.00%
BI210M	1.656E-05	0.00%
BI211	2.529E-11	0.00%
BI212	2.502E-14	0.00%
BI213	1.659E-09	0.00%
BI214	4.970E-09	0.00%
PO210	4.884E-05	0.00%
PO211	3.103E-16	0.00%
PO212	1.324E-24	0.00%
PO213	2.489E-18	0.00%
PO214	6.836E-16	0.00%
PO215	3.590E-16	0.00%
PO216	1.053E-18	0.00%
PO218	7.760E-10	0.00%
AT217	1.993E-14	0.00%
RN219	8.135E-13	0.00%
RN220	3.974E-16	0.00%
RN222	1.426E-06	0.00%
FR221	1.810E-10	0.00%
FR223	3.776E-12	0.00%
RA223	2.066E-07	0.00%
RA224	2.301E-12	0.00%
RA225	8.182E-07	0.00%
RA226	2.219E-01	0.00%
RA228	1.004E-09	0.00%
AC225	5.528E-07	0.00%
AC227	1.463E-04	0.00%
AC228	1.049E-13	0.00%
TH227	3.395E-07	0.00%
TH228	4.472E-10	0.00%
TH229	1.508E-01	0.00%
TH230	1.216E+01	0.00%
TH231	6.102E-08	0.00%
TH232	2.143E+00	0.00%
TH234	1.388E-05	0.00%
PA231	2.240E-01	0.00%
PA233	3.431E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	6.130E-09	0.00%
U233	6.032E+00	0.00%
U234	2.335E+02	0.02%
U235	1.501E+04	1.04%
U236	4.062E+03	0.28%
U237	6.192E-13	0.00%
U238	9.559E+05	66.38%
U240	5.934E-14	0.00%
NP236	1.107E-04	0.00%
NP237	1.010E+03	0.07%
NP238	2.771E-47	0.00%
NP239	2.344E-06	0.00%
NP240M	5.190E-16	0.00%
PU236	2.469E-10	0.00%
PU238	1.648E-40	0.00%
PU239	2.560E+03	0.18%
PU240	1.572E+02	0.01%
PU241	2.003E-05	0.00%
PU242	1.529E+02	0.01%
PU243	6.425E-16	0.00%
PU244	3.102E-03	0.00%
AM241	6.011E-04	0.00%
AM242	1.767E-45	0.00%

AM242M	1.478E-40	0.00%
AM243	2.727E+00	0.00%
CM242	3.584E-43	0.00%
CM244	6.802E-14	0.00%
CM245	1.200E-02	0.00%
CM246	1.928E-04	0.00%
CM247	1.802E-05	0.00%
CM248	4.894E-07	0.00%
CF249	2.244E-26	0.00%
CF250	4.873E-20	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 50000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
HE 3	2.162E-02	0.00%
HE 4	9.787E+01	0.01%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	1.006E-04	0.00%
B 10	2.876E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	4.077E-04	0.00%
N 14	1.064E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	1.643E-32	0.00%
P 31	1.845E+02	0.01%
P 32	9.896E-37	0.00%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	4.283E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	1.828E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.188E-02	0.00%
AR 38	7.744E-04	0.00%
K 40	2.755E-04	0.00%
K 41	3.437E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	6.337E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%

CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	9.534E+01	0.01%
NI 58	7.278E+03	0.51%
NI 59	1.429E+01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	2.133E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	1.503E+00	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	7.286E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.497E-03	0.00%
SR 88	2.292E+02	0.02%
Y 89	2.999E+02	0.02%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.148E+02	0.04%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.343E+02	0.05%
NB 93M	4.348E-03	0.00%
NB 94	5.824E-01	0.00%
MO 92	5.706E+01	0.00%
MO 93	4.990E-07	0.00%
MO 94	3.926E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.570E-03	0.00%

TC 99	4.197E+02	0.03%
RU 99	7.416E+01	0.01%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.034E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	6.004E-01	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.076E+01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	5.115E-07	0.00%
SB126M	3.889E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	4.840E+00	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.050E+02	0.01%
XE128	9.462E-01	0.00%
XE129	2.352E-01	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	2.042E+02	0.01%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	3.140E+00	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%

ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.129E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU151	1.168E+01	0.00%
EU153	5.907E+01	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	7.083E-17	0.00%
ER166	1.295E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.213E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.873E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	2.401E-07	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
TL206	4.265E-17	0.00%
TL207	1.141E-10	0.00%
TL208	9.078E-16	0.00%
TL209	5.864E-12	0.00%
PB204	1.376E-02	0.00%
PB205	1.753E-05	0.00%
PB206	5.615E+00	0.00%
PB207	4.736E-01	0.00%
PB208	5.264E-01	0.00%
PB209	2.443E-08	0.00%
PB210	6.873E-03	0.00%

PB211	8.826E-10	0.00%
PB212	5.354E-13	0.00%
PB214	1.601E-08	0.00%
BI208	2.127E-06	0.00%
BI209	1.366E+00	0.00%
BI210	4.229E-06	0.00%
BI210M	1.644E-05	0.00%
BI211	5.208E-11	0.00%
BI212	5.079E-14	0.00%
BI213	5.740E-09	0.00%
BI214	1.188E-08	0.00%
PO210	1.168E-04	0.00%
PO211	6.389E-16	0.00%
PO212	2.687E-24	0.00%
PO213	8.613E-18	0.00%
PO214	1.635E-15	0.00%
PO215	7.391E-16	0.00%
PO216	2.136E-18	0.00%
PO218	1.856E-09	0.00%
AT217	6.896E-14	0.00%
RN219	1.675E-12	0.00%
RN220	8.066E-16	0.00%
RN222	3.413E-06	0.00%
FR221	6.263E-10	0.00%
FR223	7.774E-12	0.00%
RA223	4.254E-07	0.00%
RA224	4.671E-12	0.00%
RA225	2.832E-06	0.00%
RA226	5.309E-01	0.00%
RA228	2.709E-09	0.00%
AC225	1.913E-06	0.00%
AC227	3.012E-04	0.00%
AC228	2.828E-13	0.00%
TH227	6.991E-07	0.00%
TH228	9.076E-10	0.00%
TH229	5.218E-01	0.00%
TH230	2.581E+01	0.00%
TH231	6.701E-08	0.00%
TH232	5.782E+00	0.00%
TH234	1.388E-05	0.00%
PA231	4.612E-01	0.00%
PA233	3.398E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	5.116E-09	0.00%
U233	1.429E+01	0.00%
U234	2.187E+02	0.02%
U235	1.648E+04	1.14%
U236	4.206E+03	0.29%
U237	5.360E-14	0.00%
U238	9.559E+05	66.38%
U240	5.933E-14	0.00%
NP236	9.237E-05	0.00%
NP237	1.000E+03	0.07%
NP239	1.400E-07	0.00%
NP240M	5.189E-16	0.00%
PU236	2.061E-10	0.00%
PU239	1.080E+03	0.08%
PU240	6.530E+00	0.00%
PU241	1.733E-06	0.00%
PU242	1.448E+02	0.01%
PU243	6.416E-16	0.00%
PU244	3.102E-03	0.00%
AM241	5.203E-05	0.00%
AM243	1.630E-01	0.00%
CM244	6.800E-14	0.00%
CM245	1.038E-03	0.00%
CM246	2.377E-06	0.00%
CM247	1.800E-05	0.00%

CM248	4.602E-07	0.00%
CF250	1.475E-20	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 100000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
HE 3	2.162E-02	0.00%
HE 4	1.150E+02	0.01%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	9.843E-05	0.00%
B 10	2.877E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	9.620E-07	0.00%
N 14	1.064E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
P 31	1.845E+02	0.01%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	4.661E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	1.629E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	4.138E-02	0.00%
AR 38	7.744E-04	0.00%
K 40	2.755E-04	0.00%
K 41	5.642E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	4.131E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%

CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	1.003E+02	0.01%
NI 58	7.278E+03	0.51%
NI 59	9.272E+00	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	1.251E+00	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	2.385E+00	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	6.178E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.615E-03	0.00%
SR 88	2.292E+02	0.02%
Y 89	2.999E+02	0.02%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	5.033E+02	0.03%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.458E+02	0.05%
NB 93M	4.250E-03	0.00%
NB 94	1.056E-01	0.00%
MO 92	5.706E+01	0.00%
MO 93	2.486E-11	0.00%
MO 94	3.974E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.557E-03	0.00%
TC 99	3.567E+02	0.02%
RU 99	1.372E+02	0.01%

RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.028E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	1.150E+00	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	7.613E+00	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	3.617E-07	0.00%
SB126M	2.750E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	7.993E+00	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.048E+02	0.01%
XE128	9.462E-01	0.00%
XE129	4.668E-01	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	2.012E+02	0.01%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	6.194E+00	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%

ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.128E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU151	1.168E+01	0.00%
EU153	5.907E+01	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
HO166M	2.030E-29	0.00%
ER166	1.295E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.182E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.862E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	4.802E-07	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
TL206	4.217E-17	0.00%
TL207	1.656E-10	0.00%
TL208	1.693E-15	0.00%
TL209	1.198E-11	0.00%
PB204	1.376E-02	0.00%
PB205	1.751E-05	0.00%
PB206	1.909E+01	0.00%
PB207	1.024E+00	0.00%
PB208	5.265E-01	0.00%
PB209	4.991E-08	0.00%
PB210	1.057E-02	0.00%
PB211	1.281E-09	0.00%
PB212	9.982E-13	0.00%

PB214	2.461E-08	0.00%
BI208	1.936E-06	0.00%
BI209	4.833E+00	0.00%
BI210	6.500E-06	0.00%
BI210M	1.626E-05	0.00%
BI211	7.560E-11	0.00%
BI212	9.469E-14	0.00%
BI213	1.173E-08	0.00%
BI214	1.827E-08	0.00%
PO210	1.796E-04	0.00%
PO211	9.274E-16	0.00%
PO212	5.010E-24	0.00%
PO213	1.759E-17	0.00%
PO214	2.514E-15	0.00%
PO215	1.073E-15	0.00%
PO216	3.983E-18	0.00%
PO218	2.853E-09	0.00%
AT217	1.409E-13	0.00%
RN219	2.432E-12	0.00%
RN220	1.504E-15	0.00%
RN222	5.246E-06	0.00%
FR221	1.279E-09	0.00%
FR223	1.128E-11	0.00%
RA223	6.176E-07	0.00%
RA224	8.708E-12	0.00%
RA225	5.784E-06	0.00%
RA226	8.161E-01	0.00%
RA228	5.580E-09	0.00%
AC225	3.907E-06	0.00%
AC227	4.372E-04	0.00%
AC228	5.824E-13	0.00%
TH227	1.014E-06	0.00%
TH228	1.693E-09	0.00%
TH229	1.066E+00	0.00%
TH230	3.962E+01	0.00%
TH231	7.033E-08	0.00%
TH232	1.190E+01	0.00%
TH234	1.388E-05	0.00%
PA231	6.695E-01	0.00%
PA233	3.343E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	3.785E-09	0.00%
U233	2.567E+01	0.00%
U234	1.966E+02	0.01%
U235	1.730E+04	1.20%
U236	4.207E+03	0.29%
U237	9.082E-16	0.00%
U238	9.559E+05	66.38%
U240	5.930E-14	0.00%
NP236	6.833E-05	0.00%
NP237	9.843E+02	0.07%
NP239	1.279E-09	0.00%
NP240M	5.187E-16	0.00%
PU236	1.525E-10	0.00%
PU239	2.559E+02	0.02%
PU240	3.255E-02	0.00%
PU241	2.937E-08	0.00%
PU242	1.324E+02	0.01%
PU243	6.402E-16	0.00%
PU244	3.101E-03	0.00%
AM241	8.815E-07	0.00%
AM243	1.489E-03	0.00%
CM244	6.797E-14	0.00%
CM245	1.760E-05	0.00%
CM246	1.566E-09	0.00%
CM247	1.796E-05	0.00%
CM248	4.155E-07	0.00%
CF250	2.012E-21	0.00%

TOTAL *1.440E+06 100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 200000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
HE 3	2.162E-02	0.00%
HE 4	1.273E+02	0.01%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	9.425E-05	0.00%
B 10	2.878E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	5.356E-12	0.00%
N 14	1.064E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
P 31	1.845E+02	0.01%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	5.299E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	1.294E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	7.426E-02	0.00%
AR 38	7.744E-04	0.00%
K 40	2.755E-04	0.00%
K 41	8.018E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.756E-04	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%

CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	1.058E+02	0.01%
NI 58	7.278E+03	0.51%
NI 59	3.898E+00	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	4.304E-01	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	3.206E+00	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	4.440E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	2.852E-03	0.00%
SR 88	2.292E+02	0.02%
Y 89	2.999E+02	0.02%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	4.809E+02	0.03%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	7.680E+02	0.05%
NB 93M	4.062E-03	0.00%
NB 94	3.474E-03	0.00%
MO 92	5.706E+01	0.00%
MO 93	6.176E-20	0.00%
MO 94	3.984E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.532E-03	0.00%
TC 99	2.576E+02	0.02%
RU 99	2.363E+02	0.02%

RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	1.018E+02	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	2.242E+00	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	3.807E+00	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	1.809E-07	0.00%
SB126M	1.375E-09	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	1.180E+01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.044E+02	0.01%
XE128	9.462E-01	0.00%
XE129	9.284E-01	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	1.952E+02	0.01%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	1.217E+01	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%

ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.126E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU151	1.168E+01	0.00%
EU153	5.907E+01	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
ER166	1.295E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	8.119E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.841E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	9.602E-07	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
TL206	4.120E-17	0.00%
TL207	1.942E-10	0.00%
TL208	3.284E-15	0.00%
TL209	2.165E-11	0.00%
PB204	1.376E-02	0.00%
PB205	1.747E-05	0.00%
PB206	5.590E+01	0.00%
PB207	2.436E+00	0.00%
PB208	5.265E-01	0.00%
PB209	9.019E-08	0.00%
PB210	1.285E-02	0.00%
PB211	1.502E-09	0.00%
PB212	1.937E-12	0.00%
PB214	2.994E-08	0.00%

BI208	1.603E-06	0.00%
BI209	1.805E+01	0.00%
BI210	7.909E-06	0.00%
BI210M	1.588E-05	0.00%
BI211	8.862E-11	0.00%
BI212	1.837E-13	0.00%
BI213	2.119E-08	0.00%
BI214	2.223E-08	0.00%
PO210	2.184E-04	0.00%
PO211	1.088E-15	0.00%
PO212	9.719E-24	0.00%
PO213	3.179E-17	0.00%
PO214	3.058E-15	0.00%
PO215	1.258E-15	0.00%
PO216	7.728E-18	0.00%
PO218	3.472E-09	0.00%
AT217	2.546E-13	0.00%
RN219	2.850E-12	0.00%
RN220	2.917E-15	0.00%
RN222	6.382E-06	0.00%
FR221	2.312E-09	0.00%
FR223	1.323E-11	0.00%
RA223	7.240E-07	0.00%
RA224	1.689E-11	0.00%
RA225	1.045E-05	0.00%
RA226	9.929E-01	0.00%
RA228	1.131E-08	0.00%
AC225	7.062E-06	0.00%
AC227	5.126E-04	0.00%
AC228	1.180E-12	0.00%
TH227	1.190E-06	0.00%
TH228	3.283E-09	0.00%
TH229	1.927E+00	0.00%
TH230	4.829E+01	0.00%
TH231	7.129E-08	0.00%
TH232	2.413E+01	0.00%
TH234	1.388E-05	0.00%
PA231	7.849E-01	0.00%
PA233	3.236E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	2.072E-09	0.00%
U233	4.153E+01	0.00%
U234	1.608E+02	0.01%
U235	1.753E+04	1.22%
U236	4.195E+03	0.29%
U237	2.607E-19	0.00%
U238	9.559E+05	66.38%
U240	5.926E-14	0.00%
NP236	3.740E-05	0.00%
NP237	9.529E+02	0.07%
NP239	1.140E-13	0.00%
NP240M	5.184E-16	0.00%
PU236	8.345E-11	0.00%
PU239	1.436E+01	0.00%
PU240	1.056E-06	0.00%
PU241	8.431E-12	0.00%
PU242	1.107E+02	0.01%
PU243	6.373E-16	0.00%
PU244	3.099E-03	0.00%
AM241	2.666E-10	0.00%
AM243	1.327E-07	0.00%
CM244	6.791E-14	0.00%
CM245	5.049E-09	0.00%
CM246	6.788E-16	0.00%
CM247	1.787E-05	0.00%
CM248	3.387E-07	0.00%
CF250	3.748E-23	0.00%

TOTAL *1.440E+06 100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 500000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
HE 3	2.162E-02	0.00%
HE 4	1.532E+02	0.01%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	8.276E-05	0.00%
B 10	2.881E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
C 14	9.246E-28	0.00%
N 14	1.064E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
P 31	1.845E+02	0.01%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	6.526E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	6.485E-02	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.376E-01	0.00%
AR 38	7.744E-04	0.00%
K 40	2.755E-04	0.00%
K 41	9.638E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.347E-05	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%

CR 53	9.108E+02	0.06%
CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	1.094E+02	0.01%
NI 58	7.278E+03	0.51%
NI 59	2.897E-01	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	1.753E-02	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	3.618E+00	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	1.648E-06	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	3.559E-03	0.00%
SR 88	2.292E+02	0.02%
Y 89	2.999E+02	0.02%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	4.198E+02	0.03%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	8.292E+02	0.06%
NB 93M	3.546E-03	0.00%
NB 94	1.235E-07	0.00%
MO 92	5.706E+01	0.00%
MO 94	3.984E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.458E-03	0.00%
TC 99	9.706E+01	0.01%
RU 99	3.969E+02	0.03%
RU100	3.478E+01	0.00%

RU101	4.682E+02	0.03%
RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	9.854E+01	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	5.447E+00	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	4.759E-01	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	2.261E-08	0.00%
SB126M	1.719E-10	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	1.514E+01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.030E+02	0.01%
XE128	9.462E-01	0.00%
XE129	2.302E+00	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	1.782E+02	0.01%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	2.903E+01	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%

ND145	4.377E+02	0.03%
ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.119E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU151	1.168E+01	0.00%
EU153	5.907E+01	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
ER166	1.295E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	7.933E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.776E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	2.401E-06	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
TL206	3.845E-17	0.00%
TL207	1.986E-10	0.00%
TL208	8.116E-15	0.00%
TL209	3.045E-11	0.00%
PB204	1.376E-02	0.00%
PB205	1.735E-05	0.00%
PB206	1.614E+02	0.01%
PB207	6.987E+00	0.00%
PB208	5.271E-01	0.00%
PB209	1.269E-07	0.00%
PB210	9.505E-03	0.00%
PB211	1.536E-09	0.00%
PB212	4.788E-12	0.00%
PB214	2.214E-08	0.00%
BI208	9.113E-07	0.00%

BI209	8.085E+01	0.01%
BI210	5.849E-06	0.00%
BI210M	1.482E-05	0.00%
BI211	9.064E-11	0.00%
BI212	4.541E-13	0.00%
BI213	2.980E-08	0.00%
BI214	1.644E-08	0.00%
PO210	1.615E-04	0.00%
PO211	1.112E-15	0.00%
PO212	2.403E-23	0.00%
PO213	4.472E-17	0.00%
PO214	2.262E-15	0.00%
PO215	1.286E-15	0.00%
PO216	1.911E-17	0.00%
PO218	2.567E-09	0.00%
AT217	3.581E-13	0.00%
RN219	2.915E-12	0.00%
RN220	7.212E-15	0.00%
RN222	4.720E-06	0.00%
FR221	3.252E-09	0.00%
FR223	1.353E-11	0.00%
RA223	7.405E-07	0.00%
RA224	4.176E-11	0.00%
RA225	1.470E-05	0.00%
RA226	7.342E-01	0.00%
RA228	2.839E-08	0.00%
AC225	9.932E-06	0.00%
AC227	5.243E-04	0.00%
AC228	2.964E-12	0.00%
TH227	1.217E-06	0.00%
TH228	8.115E-09	0.00%
TH229	2.710E+00	0.00%
TH230	3.589E+01	0.00%
TH231	7.134E-08	0.00%
TH232	6.059E+01	0.00%
TH234	1.388E-05	0.00%
PA231	8.029E-01	0.00%
PA233	2.937E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	3.396E-10	0.00%
U233	5.901E+01	0.00%
U234	9.819E+01	0.01%
U235	1.754E+04	1.22%
U236	4.157E+03	0.29%
U237	6.165E-30	0.00%
U238	9.559E+05	66.38%
U240	5.911E-14	0.00%
NP236	6.131E-06	0.00%
NP237	8.646E+02	0.06%
NP239	7.055E-15	0.00%
NP240M	5.170E-16	0.00%
PU236	1.368E-11	0.00%
PU239	2.536E-03	0.00%
PU240	2.403E-07	0.00%
PU241	1.993E-22	0.00%
PU242	6.467E+01	0.00%
PU243	6.289E-16	0.00%
PU244	3.091E-03	0.00%
AM241	6.305E-21	0.00%
AM243	8.210E-09	0.00%
CM244	6.775E-14	0.00%
CM245	1.194E-19	0.00%
CM246	3.293E-25	0.00%
CM247	1.764E-05	0.00%
CM248	1.835E-07	0.00%
CF250	2.421E-28	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 20000
ENRICHMENT: 3.00%
DECAY TIME: 1000000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.382E+00	0.00%
H 2	3.649E-03	0.00%
HE 3	2.162E-02	0.00%
HE 4	1.874E+02	0.01%
LI 6	2.159E-02	0.00%
LI 7	1.082E+00	0.00%
BE 9	4.897E-04	0.00%
BE 10	6.664E-05	0.00%
B 10	2.884E-03	0.00%
B 11	9.558E-01	0.00%
C 12	1.545E+02	0.01%
C 13	5.896E+00	0.00%
N 14	1.064E+02	0.01%
N 15	4.267E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.438E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.093E-04	0.00%
NE 21	6.382E-06	0.00%
NE 22	9.541E-06	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.015E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.827E+01	0.00%
SI 30	1.254E+01	0.00%
P 31	1.845E+02	0.01%
S 32	1.920E+01	0.00%
S 33	1.633E-01	0.00%
S 34	9.030E-01	0.00%
S 36	7.369E-03	0.00%
CL 35	3.760E+00	0.00%
CL 36	2.051E-02	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.810E-01	0.00%
AR 38	7.744E-04	0.00%
K 40	2.754E-04	0.00%
K 41	9.772E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.867E-07	0.00%
CA 42	1.353E-02	0.00%
CA 43	2.787E-03	0.00%
CA 44	4.591E-02	0.00%
CA 46	9.209E-05	0.00%
CA 48	4.541E-03	0.00%
SC 45	6.074E-05	0.00%
TI 46	8.781E+00	0.00%
TI 47	8.097E+00	0.00%
TI 48	8.130E+01	0.01%
TI 49	6.736E+00	0.00%
TI 50	6.036E+00	0.00%
V 50	2.935E-02	0.00%
V 51	1.103E+01	0.00%
CR 50	3.904E+02	0.03%
CR 52	7.871E+03	0.55%
CR 53	9.108E+02	0.06%

CR 54	2.385E+02	0.02%
MN 55	7.112E+02	0.05%
FE 54	1.494E+03	0.10%
FE 56	2.447E+04	1.70%
FE 57	6.045E+02	0.04%
FE 58	8.155E+01	0.01%
CO 59	1.097E+02	0.01%
NI 58	7.278E+03	0.51%
NI 59	3.807E-03	0.00%
NI 60	2.889E+03	0.20%
NI 61	1.332E+02	0.01%
NI 62	4.064E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	1.751E+01	0.00%
CU 65	6.191E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.681E+00	0.00%
ZN 68	7.868E+00	0.00%
ZN 70	2.699E-01	0.00%
GA 69	1.776E-02	0.00%
GA 71	3.101E-05	0.00%
GE 70	6.209E-05	0.00%
GE 72	1.190E-02	0.00%
GE 73	2.614E-02	0.00%
GE 74	5.674E-02	0.00%
GE 76	3.090E-01	0.00%
AS 75	1.218E-01	0.00%
SE 76	1.968E-03	0.00%
SE 77	6.535E-01	0.00%
SE 78	1.466E+00	0.00%
SE 79	8.446E-05	0.00%
SE 80	8.338E+00	0.00%
SE 82	2.138E+01	0.00%
BR 79	3.636E+00	0.00%
BR 81	1.385E+01	0.00%
KR 80	1.178E-04	0.00%
KR 81	3.161E-07	0.00%
KR 82	3.738E-01	0.00%
KR 83	2.962E+01	0.00%
KR 84	6.945E+01	0.00%
KR 86	1.239E+02	0.01%
RB 85	7.886E+01	0.01%
RB 87	1.595E+02	0.01%
SR 86	1.512E-01	0.00%
SR 87	4.738E-03	0.00%
SR 88	2.292E+02	0.02%
Y 89	2.999E+02	0.02%
ZR 90	1.280E+05	8.89%
ZR 91	2.838E+04	1.97%
ZR 92	4.377E+04	3.04%
ZR 93	3.348E+02	0.02%
ZR 94	4.549E+04	3.16%
ZR 96	7.879E+03	0.55%
NB 93	9.143E+02	0.06%
NB 93M	2.827E-03	0.00%
NB 94	4.756E-15	0.00%
MO 92	5.706E+01	0.00%
MO 94	3.984E+01	0.00%
MO 95	5.555E+02	0.04%
MO 96	8.064E+01	0.01%
MO 97	5.444E+02	0.04%
MO 98	5.955E+02	0.04%
MO100	6.025E+02	0.04%
TC 98	1.342E-03	0.00%
TC 99	1.907E+01	0.00%
RU 99	4.749E+02	0.03%
RU100	3.478E+01	0.00%
RU101	4.682E+02	0.03%

RU102	4.445E+02	0.03%
RU104	2.922E+02	0.02%
RH103	3.081E+02	0.02%
PD104	7.801E+01	0.01%
PD105	2.001E+02	0.01%
PD106	1.708E+02	0.01%
PD107	9.342E+01	0.01%
PD108	7.040E+01	0.00%
PD110	2.312E+01	0.00%
AG107	1.057E+01	0.00%
AG109	3.912E+01	0.00%
CD106	3.066E-01	0.00%
CD108	2.177E-01	0.00%
CD110	1.274E+01	0.00%
CD111	1.647E+01	0.00%
CD112	1.423E+01	0.00%
CD113	1.419E-01	0.00%
CD114	2.194E+01	0.00%
CD116	6.426E+00	0.00%
IN113	5.552E-01	0.00%
IN115	2.239E+00	0.00%
SN112	3.841E+01	0.00%
SN114	2.647E+01	0.00%
SN115	1.444E+01	0.00%
SN116	5.912E+02	0.04%
SN117	3.202E+02	0.02%
SN118	9.954E+02	0.07%
SN119	3.629E+02	0.03%
SN120	1.352E+03	0.09%
SN122	1.994E+02	0.01%
SN124	2.462E+02	0.02%
SN126	1.488E-02	0.00%
SB121	5.774E+00	0.00%
SB123	5.868E+00	0.00%
SB126	7.068E-10	0.00%
SB126M	5.374E-12	0.00%
TE122	2.254E-01	0.00%
TE123	2.304E-03	0.00%
TE124	1.335E-01	0.00%
TE125	1.167E+01	0.00%
TE126	1.560E+01	0.00%
TE128	6.303E+01	0.00%
TE130	2.067E+02	0.01%
I127	3.133E+01	0.00%
I129	1.007E+02	0.01%
XE128	9.462E-01	0.00%
XE129	4.550E+00	0.00%
XE130	3.894E+00	0.00%
XE131	2.969E+02	0.02%
XE132	6.020E+02	0.04%
XE134	8.937E+02	0.06%
XE136	1.375E+03	0.10%
CS133	7.288E+02	0.05%
CS135	1.534E+02	0.01%
BA132	4.753E-04	0.00%
BA134	5.950E+01	0.00%
BA135	5.398E+01	0.00%
BA136	7.951E+00	0.00%
BA137	7.448E+02	0.05%
BA138	7.843E+02	0.05%
LA138	4.418E-03	0.00%
LA139	7.510E+02	0.05%
CE140	7.514E+02	0.05%
CE142	6.952E+02	0.05%
PR141	6.934E+02	0.05%
ND142	8.362E+00	0.00%
ND143	5.686E+02	0.04%
ND144	7.439E+02	0.05%
ND145	4.377E+02	0.03%

ND146	3.988E+02	0.03%
ND148	2.242E+02	0.02%
ND150	1.025E+02	0.01%
SM146	2.109E-03	0.00%
SM147	1.710E+02	0.01%
SM148	7.760E+01	0.01%
SM149	3.471E+00	0.00%
SM150	1.802E+02	0.01%
SM152	8.556E+01	0.01%
SM154	1.960E+01	0.00%
EU151	1.168E+01	0.00%
EU153	5.907E+01	0.00%
GD152	3.540E-02	0.00%
GD154	1.271E+01	0.00%
GD155	5.448E+00	0.00%
GD156	2.110E+01	0.00%
GD157	6.803E-02	0.00%
GD158	8.784E+00	0.00%
GD160	1.139E+00	0.00%
TB159	1.234E+00	0.00%
DY160	8.724E-02	0.00%
DY161	2.200E-01	0.00%
DY162	1.693E-01	0.00%
DY163	1.105E-01	0.00%
DY164	2.556E-02	0.00%
HO165	4.260E-02	0.00%
ER166	1.295E-02	0.00%
ER167	2.271E-03	0.00%
ER168	1.973E-03	0.00%
TM169	8.176E-06	0.00%
LU175	1.170E-02	0.00%
LU176	2.364E-04	0.00%
HF174	1.800E-02	0.00%
HF176	7.926E-01	0.00%
HF177	3.866E-01	0.00%
HF178	4.898E+00	0.00%
HF179	5.798E+00	0.00%
HF180	7.967E+00	0.00%
HF182	7.634E-04	0.00%
TA181	1.819E-01	0.00%
TA182	2.671E-11	0.00%
W180	8.644E-03	0.00%
W182	1.541E+00	0.00%
W183	1.266E+00	0.00%
W184	2.356E+00	0.00%
W186	1.724E+00	0.00%
RE185	1.164E-02	0.00%
RE187	3.464E-01	0.00%
OS186	2.828E-03	0.00%
OS187	4.802E-06	0.00%
OS188	3.312E-02	0.00%
OS189	5.222E-04	0.00%
OS190	3.655E-05	0.00%
TL206	3.425E-17	0.00%
TL207	1.985E-10	0.00%
TL208	1.614E-14	0.00%
TL209	2.922E-11	0.00%
PB204	1.376E-02	0.00%
PB205	1.715E-05	0.00%
PB206	2.707E+02	0.02%
PB207	1.460E+01	0.00%
PB208	5.292E-01	0.00%
PB209	1.217E-07	0.00%
PB210	5.561E-03	0.00%
PB211	1.535E-09	0.00%
PB212	9.522E-12	0.00%
PB214	1.295E-08	0.00%
BI208	3.554E-07	0.00%
BI209	1.986E+02	0.01%

BI210	3.422E-06	0.00%
BI210M	1.320E-05	0.00%
BI211	9.060E-11	0.00%
BI212	9.032E-13	0.00%
BI213	2.860E-08	0.00%
BI214	9.617E-09	0.00%
PO210	9.452E-05	0.00%
PO211	1.111E-15	0.00%
PO212	4.778E-23	0.00%
PO213	4.292E-17	0.00%
PO214	1.323E-15	0.00%
PO215	1.285E-15	0.00%
PO216	3.799E-17	0.00%
PO218	1.502E-09	0.00%
AT217	3.437E-13	0.00%
RN219	2.914E-12	0.00%
RN220	1.435E-14	0.00%
RN222	2.761E-06	0.00%
FR221	3.121E-09	0.00%
FR223	1.352E-11	0.00%
RA223	7.402E-07	0.00%
RA224	8.306E-11	0.00%
RA225	1.411E-05	0.00%
RA226	4.296E-01	0.00%
RA228	5.654E-08	0.00%
AC225	9.531E-06	0.00%
AC227	5.240E-04	0.00%
AC228	5.901E-12	0.00%
TH227	1.216E-06	0.00%
TH228	1.614E-08	0.00%
TH229	2.600E+00	0.00%
TH230	2.103E+01	0.00%
TH231	7.130E-08	0.00%
TH232	1.206E+02	0.01%
TH234	1.388E-05	0.00%
PA231	8.025E-01	0.00%
PA233	2.498E-05	0.00%
PA234	2.090E-10	0.00%
PA234M	4.679E-10	0.00%
U232	1.668E-11	0.00%
U233	5.682E+01	0.00%
U234	6.278E+01	0.00%
U235	1.753E+04	1.22%
U236	4.096E+03	0.28%
U237	1.201E-47	0.00%
U238	9.559E+05	66.38%
U240	5.887E-14	0.00%
NP236	3.010E-07	0.00%
NP237	7.354E+02	0.05%
NP239	6.901E-15	0.00%
NP240M	5.149E-16	0.00%
PU236	6.717E-13	0.00%
PU239	2.730E-08	0.00%
PU240	2.392E-07	0.00%
PU241	3.885E-40	0.00%
PU242	2.641E+01	0.00%
PU243	6.151E-16	0.00%
PU244	3.078E-03	0.00%
AM241	1.228E-38	0.00%
AM243	8.030E-09	0.00%
CM244	6.746E-14	0.00%
CM245	2.327E-37	0.00%
CM246	7.368E-34	0.00%
CM247	1.726E-05	0.00%
CM248	6.600E-08	0.00%
CF250	5.415E-37	0.00%
TOTAL	*1.440E+06	100.01%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 1 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	8.326E-02	0.00%
HE 3	1.742E-03	0.00%
HE 4	3.354E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.183E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.883E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	4.224E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.883E-11	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 35	3.384E-05	0.00%
S 36	3.858E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.289E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	2.018E-06	0.00%
AR 37	3.320E-09	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.829E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.713E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.595E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	4.769E-06	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	9.526E-05	0.00%
SC 46	3.334E-06	0.00%

TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 51	2.240E-05	0.00%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	2.517E-02	0.00%
MN 55	7.088E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	9.946E-01	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.279E+01	0.01%
FE 59	1.571E-05	0.00%
CO 58	4.847E-03	0.00%
CO 59	8.408E+01	0.01%
CO 60	6.883E+00	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.462E+01	0.00%
NI 60	2.885E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	6.990E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.320E+01	0.00%
CU 65	6.281E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	4.690E-03	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.581E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	2.039E-04	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	2.461E+01	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.131E+02	0.01%
RB 86	3.364E-08	0.00%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 89	1.782E-01	0.00%
SR 90	5.859E+02	0.04%

Y 89	5.189E+02	0.04%
Y 90	1.470E-01	0.00%
Y 91	5.503E-01	0.00%
ZR 90	1.275E+05	8.85%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 95	1.324E+00	0.00%
ZR 96	8.267E+03	0.57%
NB 93	7.190E+02	0.05%
NB 93M	1.084E-03	0.00%
NB 94	5.978E+00	0.00%
NB 95	1.637E+00	0.00%
NB 95M	5.540E-04	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.867E-02	0.00%
MO 94	3.661E+01	0.00%
MO 95	9.228E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.595E+02	0.06%
RU 99	7.893E-03	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU103	7.011E-02	0.00%
RU104	5.907E+02	0.04%
RU106	7.662E+01	0.01%
RH102	6.963E-04	0.00%
RH103	4.824E+02	0.03%
RH103M	6.270E-05	0.00%
RH106	7.201E-05	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.042E+02	0.02%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.398E-02	0.00%
AG108	1.496E-12	0.00%
AG108M	4.741E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	2.838E-10	0.00%
AG110	4.804E-09	0.00%
AG110M	3.170E-01	0.00%
CD106	3.063E-01	0.00%
CD108	2.204E-01	0.00%
CD109	2.873E-04	0.00%
CD110	4.232E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.757E-01	0.00%
CD113M	2.679E-01	0.00%
CD114	3.438E+01	0.00%
CD115M	2.333E-04	0.00%
CD116	1.082E+01	0.00%
IN113	7.120E-01	0.00%
IN113M	5.452E-06	0.00%
IN114	5.733E-10	0.00%
IN114M	3.564E-05	0.00%
IN115	2.433E+00	0.00%
IN115M	6.491E-11	0.00%
SN112	3.806E+01	0.00%
SN113	9.078E-03	0.00%
SN114	2.653E+01	0.00%

SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN117M	1.251E-09	0.00%
SN118	9.976E+02	0.07%
SN119	3.713E+02	0.03%
SN119M	4.866E-01	0.00%
SN120	1.356E+03	0.09%
SN121M	1.446E-02	0.00%
SN122	2.044E+02	0.01%
SN123	6.232E-02	0.00%
SN124	2.517E+02	0.02%
SN126	2.988E+01	0.00%
SB121	1.086E+01	0.00%
SB123	1.114E+01	0.00%
SB124	1.274E-03	0.00%
SB125	1.227E+01	0.00%
SB126	1.420E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.205E-02	0.00%
TE123M	2.794E-04	0.00%
TE124	5.227E-01	0.00%
TE125	1.052E+01	0.00%
TE125M	1.711E-01	0.00%
TE126	8.809E-01	0.00%
TE127	4.884E-04	0.00%
TE127M	1.395E-01	0.00%
TE128	1.213E+02	0.01%
TE129	7.232E-07	0.00%
TE129M	7.724E-04	0.00%
TE130	3.920E+02	0.03%
I127	5.971E+01	0.00%
I129	1.971E+02	0.01%
XE127	1.789E-09	0.00%
XE128	3.731E+00	0.00%
XE129	2.141E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE131M	2.127E-10	0.00%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	1.008E+02	0.01%
CS135	4.399E+02	0.03%
CS136	3.284E-09	0.00%
CS137	1.290E+03	0.09%
BA132	1.741E-03	0.00%
BA134	9.794E+01	0.01%
BA135	4.478E-01	0.00%
BA136	2.485E+01	0.00%
BA136M	1.473E-16	0.00%
BA137	8.647E+01	0.01%
BA137M	1.974E-04	0.00%
BA138	1.431E+03	0.10%
BA140	5.252E-08	0.00%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
LA140	7.920E-09	0.00%
CE140	1.378E+03	0.10%
CE141	2.130E-02	0.00%
CE142	1.263E+03	0.09%
CE144	1.350E+02	0.01%
PR141	1.251E+03	0.09%
PR143	1.697E-07	0.00%
PR144	5.700E-03	0.00%
PR144M	2.850E-05	0.00%
ND142	2.926E+01	0.00%

ND143	8.971E+02	0.06%
ND144	1.333E+03	0.09%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND147	8.230E-10	0.00%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	5.207E-03	0.00%
PM147	1.089E+02	0.01%
PM148	2.168E-05	0.00%
PM148M	2.960E-03	0.00%
SM146	6.815E-03	0.00%
SM147	1.134E+02	0.01%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.712E+01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	3.188E-07	0.00%
EU151	1.460E-01	0.00%
EU152	5.180E-02	0.00%
EU153	1.335E+02	0.01%
EU154	3.646E+01	0.00%
EU155	1.327E+01	0.00%
EU156	1.937E-07	0.00%
GD152	6.375E-02	0.00%
GD153	1.743E-03	0.00%
GD154	6.366E+00	0.00%
GD155	2.113E+00	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
TB160	2.856E-03	0.00%
DY160	3.294E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.446E-03	0.00%
ER166	4.356E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM170	8.739E-07	0.00%
TM171	3.654E-07	0.00%
YB170	1.285E-05	0.00%
LU175	1.409E-02	0.00%
LU176	4.613E-04	0.00%
LU177	2.307E-09	0.00%
LU177M	2.317E-07	0.00%
HF174	1.235E-02	0.00%
HF175	3.540E-05	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF181	7.262E-05	0.00%
HF182	1.471E-03	0.00%
TA181	3.140E-01	0.00%
TA182	7.181E-04	0.00%
W180	8.108E-03	0.00%
W181	2.298E-05	0.00%
W182	1.287E+00	0.00%
W183	1.419E+00	0.00%

W184	2.496E+00	0.00%
W185	1.132E-04	0.00%
W186	1.444E+00	0.00%
W188	4.350E-06	0.00%
RE185	1.735E-02	0.00%
RE187	5.539E-01	0.00%
RE188	4.481E-08	0.00%
OS186	9.659E-03	0.00%
OS187	1.743E-11	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	1.540E-08	0.00%
TL206	7.867E-17	0.00%
TL207	7.645E-15	0.00%
TL208	8.659E-12	0.00%
TL209	1.045E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.263E-01	0.00%
PB209	4.357E-14	0.00%
PB210	6.947E-11	0.00%
PB211	5.914E-14	0.00%
PB212	5.107E-09	0.00%
PB214	1.646E-15	0.00%
BI208	4.694E-06	0.00%
BI209	3.999E-01	0.00%
BI210	4.277E-14	0.00%
BI210M	3.032E-05	0.00%
BI211	3.490E-15	0.00%
BI212	4.844E-10	0.00%
BI213	1.024E-14	0.00%
BI214	1.222E-15	0.00%
PO210	1.305E-06	0.00%
PO211	4.282E-20	0.00%
PO212	2.564E-20	0.00%
PO213	1.536E-23	0.00%
PO214	1.681E-22	0.00%
PO215	4.952E-20	0.00%
PO216	2.038E-14	0.00%
PO218	1.907E-16	0.00%
AT217	1.230E-19	0.00%
RN219	1.122E-16	0.00%
RN220	7.694E-12	0.00%
RN222	3.507E-13	0.00%
FR221	1.117E-15	0.00%
FR223	5.203E-16	0.00%
RA223	2.851E-11	0.00%
RA224	4.455E-08	0.00%
RA225	5.049E-12	0.00%
RA226	5.457E-08	0.00%
RA228	3.246E-14	0.00%
AC225	3.411E-12	0.00%
AC227	2.016E-08	0.00%
AC228	3.388E-18	0.00%
TH227	4.685E-11	0.00%
TH228	8.644E-06	0.00%
TH229	9.306E-07	0.00%
TH230	2.404E-03	0.00%
TH231	3.808E-08	0.00%
TH232	4.286E-04	0.00%
TH234	1.358E-05	0.00%
PA231	4.871E-04	0.00%
PA233	2.033E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	8.789E-04	0.00%

U233	1.830E-03	0.00%
U234	1.955E+02	0.01%
U235	9.363E+03	0.65%
U236	4.613E+03	0.32%
U237	3.970E-05	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	2.683E-06	0.00%
NP236	5.012E-04	0.00%
NP237	5.984E+02	0.04%
NP238	4.103E-07	0.00%
NP239	8.789E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	9.983E-04	0.00%
PU237	9.497E-07	0.00%
PU238	2.018E+02	0.01%
PU239	5.992E+03	0.42%
PU240	2.316E+03	0.16%
PU241	1.282E+03	0.09%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	1.129E+02	0.01%
AM242	2.617E-05	0.00%
AM242M	2.188E+00	0.00%
AM243	1.022E+02	0.01%
CM241	9.851E-10	0.00%
CM242	3.134E+00	0.00%
CM243	4.635E-01	0.00%
CM244	3.189E+01	0.00%
CM245	1.336E+00	0.00%
CM246	1.445E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	3.735E-07	0.00%
CF249	5.659E-07	0.00%
CF250	1.611E-07	0.00%
CF251	7.171E-08	0.00%
CF252	2.824E-08	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 2 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	7.871E-02	0.00%
HE 3	3.106E-03	0.00%
HE 4	3.454E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.183E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.882E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	4.219E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.542E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 35	1.906E-06	0.00%
S 36	3.858E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.289E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	2.763E-06	0.00%
AR 37	2.409E-12	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.824E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.715E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.595E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	1.009E-06	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	9.901E-05	0.00%
SC 46	1.625E-07	0.00%

TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 51	2.410E-09	0.00%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	1.120E-02	0.00%
MN 55	7.090E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	7.622E-01	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
FE 59	5.658E-08	0.00%
CO 58	1.355E-04	0.00%
CO 59	8.408E+01	0.01%
CO 60	6.035E+00	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.462E+01	0.00%
NI 60	2.886E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	6.938E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.325E+01	0.00%
CU 65	6.284E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	1.661E-03	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.581E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	2.744E-04	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	2.307E+01	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.147E+02	0.01%
RB 86	4.303E-14	0.00%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 89	1.185E-03	0.00%
SR 90	5.721E+02	0.04%

Y 89	5.190E+02	0.04%
Y 90	1.435E-01	0.00%
Y 91	7.266E-03	0.00%
ZR 90	1.276E+05	8.86%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 95	2.531E-02	0.00%
ZR 96	8.267E+03	0.57%
NB 93	7.190E+02	0.05%
NB 93M	1.423E-03	0.00%
NB 94	5.977E+00	0.00%
NB 95	3.196E-02	0.00%
NB 95M	1.059E-05	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.866E-02	0.00%
MO 94	3.661E+01	0.00%
MO 95	9.257E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.595E+02	0.06%
RU 99	1.070E-02	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU103	1.114E-04	0.00%
RU104	5.907E+02	0.04%
RU106	3.852E+01	0.00%
RH102	5.482E-04	0.00%
RH103	4.825E+02	0.03%
RH103M	9.960E-08	0.00%
RH106	3.621E-05	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.424E+02	0.02%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.400E-02	0.00%
AG108	1.489E-12	0.00%
AG108M	4.715E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	1.645E-10	0.00%
AG110	1.744E-09	0.00%
AG110M	1.151E-01	0.00%
CD106	3.063E-01	0.00%
CD108	2.204E-01	0.00%
CD109	1.664E-04	0.00%
CD110	4.252E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.757E-01	0.00%
CD113M	2.555E-01	0.00%
CD114	3.438E+01	0.00%
CD115M	7.988E-07	0.00%
CD116	1.082E+01	0.00%
IN113	7.325E-01	0.00%
IN113M	6.044E-07	0.00%
IN114	3.450E-12	0.00%
IN114M	2.145E-07	0.00%
IN115	2.434E+00	0.00%
IN115M	2.222E-13	0.00%
SN112	3.806E+01	0.00%
SN113	1.006E-03	0.00%
SN114	2.653E+01	0.00%

SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN117M	1.762E-17	0.00%
SN118	9.976E+02	0.07%
SN119	3.715E+02	0.03%
SN119M	1.732E-01	0.00%
SN120	1.356E+03	0.09%
SN121M	1.426E-02	0.00%
SN122	2.044E+02	0.01%
SN123	8.778E-03	0.00%
SN124	2.517E+02	0.02%
SN126	2.988E+01	0.00%
SB121	1.086E+01	0.00%
SB123	1.119E+01	0.00%
SB124	1.899E-05	0.00%
SB125	9.547E+00	0.00%
SB126	1.420E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.230E-02	0.00%
TE123M	3.368E-05	0.00%
TE124	5.240E-01	0.00%
TE125	1.328E+01	0.00%
TE125M	1.335E-01	0.00%
TE126	8.809E-01	0.00%
TE127	4.788E-05	0.00%
TE127M	1.368E-02	0.00%
TE128	1.213E+02	0.01%
TE129	3.863E-10	0.00%
TE129M	4.125E-07	0.00%
TE130	3.920E+02	0.03%
I127	5.983E+01	0.00%
I129	1.971E+02	0.01%
XE127	1.709E-12	0.00%
XE128	3.731E+00	0.00%
XE129	2.142E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE131M	1.221E-19	0.00%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	7.203E+01	0.01%
CS135	4.399E+02	0.03%
CS136	1.331E-17	0.00%
CS137	1.261E+03	0.09%
BA132	1.741E-03	0.00%
BA134	1.268E+02	0.01%
BA135	4.479E-01	0.00%
BA136	2.485E+01	0.00%
BA136M	5.971E-25	0.00%
BA137	1.160E+02	0.01%
BA137M	1.929E-04	0.00%
BA138	1.431E+03	0.10%
BA140	1.328E-16	0.00%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
LA140	2.003E-17	0.00%
CE140	1.378E+03	0.10%
CE141	8.843E-06	0.00%
CE142	1.263E+03	0.09%
CE144	5.540E+01	0.00%
PR141	1.251E+03	0.09%
PR143	1.331E-15	0.00%
PR144	2.339E-03	0.00%
PR144M	1.169E-05	0.00%
ND142	2.926E+01	0.00%

ND143	8.971E+02	0.06%
ND144	1.413E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND147	9.424E-20	0.00%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	4.590E-03	0.00%
PM147	8.366E+01	0.01%
PM148	4.717E-08	0.00%
PM148M	6.440E-06	0.00%
SM146	7.046E-03	0.00%
SM147	1.387E+02	0.01%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.698E+01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	3.128E-07	0.00%
EU151	2.773E-01	0.00%
EU152	4.922E-02	0.00%
EU153	1.335E+02	0.01%
EU154	3.364E+01	0.00%
EU155	1.154E+01	0.00%
EU156	1.113E-14	0.00%
GD152	6.447E-02	0.00%
GD153	6.121E-04	0.00%
GD154	9.196E+00	0.00%
GD155	3.844E+00	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
TB160	8.610E-05	0.00%
DY160	3.321E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.446E-03	0.00%
ER166	4.356E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM170	1.220E-07	0.00%
TM171	2.547E-07	0.00%
YB170	1.360E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
LU177	4.504E-10	0.00%
LU177M	4.524E-08	0.00%
HF174	1.235E-02	0.00%
HF175	9.512E-07	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF181	1.852E-07	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	7.944E-05	0.00%
W180	8.108E-03	0.00%
W181	2.845E-06	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%

W184	2.496E+00	0.00%
W185	3.889E-06	0.00%
W186	1.444E+00	0.00%
W188	1.133E-07	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
RE188	1.166E-09	0.00%
OS186	9.659E-03	0.00%
OS187	2.513E-11	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	5.039E-10	0.00%
TL206	7.867E-17	0.00%
TL207	1.123E-14	0.00%
TL208	1.392E-11	0.00%
TL209	1.056E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.263E-01	0.00%
PB209	4.399E-14	0.00%
PB210	9.410E-11	0.00%
PB211	8.690E-14	0.00%
PB212	8.210E-09	0.00%
PB214	2.364E-15	0.00%
BI208	4.694E-06	0.00%
BI209	3.999E-01	0.00%
BI210	5.795E-14	0.00%
BI210M	3.032E-05	0.00%
BI211	5.127E-15	0.00%
BI212	7.785E-10	0.00%
BI213	1.033E-14	0.00%
BI214	1.755E-15	0.00%
PO210	2.096E-07	0.00%
PO211	6.291E-20	0.00%
PO212	4.119E-20	0.00%
PO213	1.550E-23	0.00%
PO214	2.415E-22	0.00%
PO215	7.277E-20	0.00%
PO216	3.275E-14	0.00%
PO218	2.740E-16	0.00%
AT217	1.241E-19	0.00%
RN219	1.649E-16	0.00%
RN220	1.236E-11	0.00%
RN222	5.038E-13	0.00%
FR221	1.128E-15	0.00%
FR223	7.641E-16	0.00%
RA223	4.188E-11	0.00%
RA224	7.160E-08	0.00%
RA225	5.098E-12	0.00%
RA226	7.838E-08	0.00%
RA228	5.224E-14	0.00%
AC225	3.444E-12	0.00%
AC227	2.961E-08	0.00%
AC228	5.454E-18	0.00%
TH227	6.883E-11	0.00%
TH228	1.389E-05	0.00%
TH229	9.394E-07	0.00%
TH230	2.953E-03	0.00%
TH231	3.808E-08	0.00%
TH232	5.633E-04	0.00%
TH234	1.358E-05	0.00%
PA231	4.965E-04	0.00%
PA233	2.033E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.081E-03	0.00%

U233	2.043E-03	0.00%
U234	1.971E+02	0.01%
U235	9.363E+03	0.65%
U236	4.613E+03	0.32%
U237	3.783E-05	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	1.416E-06	0.00%
NP236	5.012E-04	0.00%
NP237	5.987E+02	0.04%
NP238	4.084E-07	0.00%
NP239	8.788E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	7.829E-04	0.00%
PU237	3.684E-09	0.00%
PU238	2.027E+02	0.01%
PU239	5.991E+03	0.42%
PU240	2.318E+03	0.16%
PU241	1.222E+03	0.08%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	1.730E+02	0.01%
AM242	2.606E-05	0.00%
AM242M	2.178E+00	0.00%
AM243	1.022E+02	0.01%
CM241	8.694E-13	0.00%
CM242	6.685E-01	0.00%
CM243	4.524E-01	0.00%
CM244	3.069E+01	0.00%
CM245	1.335E+00	0.00%
CM246	1.445E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	1.693E-07	0.00%
CF249	7.688E-07	0.00%
CF250	1.528E-07	0.00%
CF251	7.165E-08	0.00%
CF252	2.171E-08	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 3 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	7.441E-02	0.00%
HE 3	4.394E-03	0.00%
HE 4	3.523E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.183E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.882E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	4.215E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.539E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 35	1.073E-07	0.00%
S 36	3.858E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.289E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	3.507E-06	0.00%
AR 37	1.748E-15	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.820E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.716E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.595E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	2.133E-07	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	9.986E-05	0.00%
SC 46	7.920E-09	0.00%

TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 51	2.594E-13	0.00%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	4.979E-03	0.00%
MN 55	7.092E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	5.838E-01	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
FE 59	2.039E-10	0.00%
CO 58	3.788E-06	0.00%
CO 59	8.408E+01	0.01%
CO 60	5.290E+00	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.462E+01	0.00%
NI 60	2.887E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	6.886E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.330E+01	0.00%
CU 65	6.285E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	5.882E-04	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.581E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	3.447E-04	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	2.163E+01	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.161E+02	0.01%
RB 86	5.502E-20	0.00%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 89	7.875E-06	0.00%
SR 90	5.586E+02	0.04%

Y 89	5.190E+02	0.04%
Y 90	1.401E-01	0.00%
Y 91	9.593E-05	0.00%
ZR 90	1.276E+05	8.86%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 95	4.840E-04	0.00%
ZR 96	8.267E+03	0.57%
NB 93	7.190E+02	0.05%
NB 93M	1.745E-03	0.00%
NB 94	5.977E+00	0.00%
NB 95	6.118E-04	0.00%
NB 95M	2.025E-07	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.866E-02	0.00%
MO 94	3.661E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.595E+02	0.06%
RU 99	1.350E-02	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU103	1.769E-07	0.00%
RU104	5.907E+02	0.04%
RU106	1.937E+01	0.00%
RH102	4.317E-04	0.00%
RH103	4.825E+02	0.03%
RH103M	1.582E-10	0.00%
RH106	1.820E-05	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.617E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.403E-02	0.00%
AG108	1.481E-12	0.00%
AG108M	4.690E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	9.528E-11	0.00%
AG110	6.332E-10	0.00%
AG110M	4.179E-02	0.00%
CD106	3.063E-01	0.00%
CD108	2.204E-01	0.00%
CD109	9.648E-05	0.00%
CD110	4.260E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.757E-01	0.00%
CD113M	2.437E-01	0.00%
CD114	3.438E+01	0.00%
CD115M	2.735E-09	0.00%
CD116	1.082E+01	0.00%
IN113	7.453E-01	0.00%
IN113M	6.700E-08	0.00%
IN114	2.076E-14	0.00%
IN114M	1.291E-09	0.00%
IN115	2.434E+00	0.00%
IN115M	7.607E-16	0.00%
SN112	3.806E+01	0.00%
SN113	1.116E-04	0.00%
SN114	2.653E+01	0.00%

SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN117M	2.483E-25	0.00%
SN118	9.976E+02	0.07%
SN119	3.716E+02	0.03%
SN119M	6.163E-02	0.00%
SN120	1.356E+03	0.09%
SN121M	1.407E-02	0.00%
SN122	2.044E+02	0.01%
SN123	1.236E-03	0.00%
SN124	2.517E+02	0.02%
SN126	2.988E+01	0.00%
SB121	1.086E+01	0.00%
SB123	1.120E+01	0.00%
SB124	2.831E-07	0.00%
SB125	7.434E+00	0.00%
SB126	1.420E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.232E-02	0.00%
TE123M	4.061E-06	0.00%
TE124	5.240E-01	0.00%
TE125	1.542E+01	0.00%
TE125M	1.040E-01	0.00%
TE126	8.811E-01	0.00%
TE127	4.693E-06	0.00%
TE127M	1.340E-03	0.00%
TE128	1.213E+02	0.01%
TE129	2.063E-13	0.00%
TE129M	2.203E-10	0.00%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE127	1.634E-15	0.00%
XE128	3.731E+00	0.00%
XE129	2.143E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE131M	7.009E-29	0.00%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	5.146E+01	0.00%
CS135	4.399E+02	0.03%
CS136	5.400E-26	0.00%
CS137	1.233E+03	0.09%
BA132	1.741E-03	0.00%
BA134	1.474E+02	0.01%
BA135	4.480E-01	0.00%
BA136	2.485E+01	0.00%
BA136M	2.422E-33	0.00%
BA137	1.449E+02	0.01%
BA137M	1.885E-04	0.00%
BA138	1.431E+03	0.10%
BA140	3.359E-25	0.00%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
LA140	5.065E-26	0.00%
CE140	1.378E+03	0.10%
CE141	3.670E-09	0.00%
CE142	1.263E+03	0.09%
CE144	2.273E+01	0.00%
PR141	1.251E+03	0.09%
PR143	1.044E-23	0.00%
PR144	9.601E-04	0.00%
PR144M	4.799E-06	0.00%
ND142	2.926E+01	0.00%

ND143	8.971E+02	0.06%
ND144	1.446E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND147	1.079E-29	0.00%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	4.047E-03	0.00%
PM147	6.423E+01	0.00%
PM148	1.026E-10	0.00%
PM148M	1.400E-08	0.00%
SM146	7.250E-03	0.00%
SM147	1.582E+02	0.01%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.685E+01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	3.068E-07	0.00%
EU151	4.077E-01	0.00%
EU152	4.678E-02	0.00%
EU153	1.335E+02	0.01%
EU154	3.104E+01	0.00%
EU155	1.003E+01	0.00%
EU156	6.393E-22	0.00%
GD152	6.515E-02	0.00%
GD153	2.151E-04	0.00%
GD154	1.180E+01	0.00%
GD155	5.349E+00	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
TB160	2.596E-06	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.445E-03	0.00%
ER166	4.356E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM170	1.704E-08	0.00%
TM171	1.775E-07	0.00%
YB170	1.371E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
LU177	8.792E-11	0.00%
LU177M	8.834E-09	0.00%
HF174	1.235E-02	0.00%
HF175	2.556E-08	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF181	4.723E-10	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	8.791E-06	0.00%
W180	8.108E-03	0.00%
W181	3.522E-07	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%

W184	2.496E+00	0.00%
W185	1.336E-07	0.00%
W186	1.444E+00	0.00%
W188	2.950E-09	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
RE188	3.038E-11	0.00%
OS186	9.659E-03	0.00%
OS187	3.281E-11	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	1.694E-11	0.00%
TL206	7.867E-17	0.00%
TL207	1.478E-14	0.00%
TL208	1.898E-11	0.00%
TL209	1.066E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.263E-01	0.00%
PB209	4.445E-14	0.00%
PB210	1.284E-10	0.00%
PB211	1.144E-13	0.00%
PB212	1.119E-08	0.00%
PB214	3.226E-15	0.00%
BI208	4.694E-06	0.00%
BI209	3.999E-01	0.00%
BI210	7.903E-14	0.00%
BI210M	3.032E-05	0.00%
BI211	6.745E-15	0.00%
BI212	1.062E-09	0.00%
BI213	1.044E-14	0.00%
BI214	2.395E-15	0.00%
PO210	3.366E-08	0.00%
PO211	8.276E-20	0.00%
PO212	5.618E-20	0.00%
PO213	1.567E-23	0.00%
PO214	3.296E-22	0.00%
PO215	9.572E-20	0.00%
PO216	4.467E-14	0.00%
PO218	3.741E-16	0.00%
AT217	1.255E-19	0.00%
RN219	2.170E-16	0.00%
RN220	1.687E-11	0.00%
RN222	6.879E-13	0.00%
FR221	1.139E-15	0.00%
FR223	1.005E-15	0.00%
RA223	5.511E-11	0.00%
RA224	9.764E-08	0.00%
RA225	5.152E-12	0.00%
RA226	1.070E-07	0.00%
RA228	7.626E-14	0.00%
AC225	3.480E-12	0.00%
AC227	3.895E-08	0.00%
AC228	7.961E-18	0.00%
TH227	9.053E-11	0.00%
TH228	1.893E-05	0.00%
TH229	9.493E-07	0.00%
TH230	3.506E-03	0.00%
TH231	3.808E-08	0.00%
TH232	6.979E-04	0.00%
TH234	1.358E-05	0.00%
PA231	5.059E-04	0.00%
PA233	2.035E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.236E-03	0.00%

U233	2.254E-03	0.00%
U234	1.988E+02	0.01%
U235	9.363E+03	0.65%
U236	4.614E+03	0.32%
U237	3.605E-05	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	7.473E-07	0.00%
NP236	5.012E-04	0.00%
NP237	5.990E+02	0.04%
NP238	4.065E-07	0.00%
NP239	8.788E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	6.139E-04	0.00%
PU237	1.430E-11	0.00%
PU238	2.015E+02	0.01%
PU239	5.991E+03	0.42%
PU240	2.319E+03	0.16%
PU241	1.164E+03	0.08%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	2.300E+02	0.02%
AM242	2.594E-05	0.00%
AM242M	2.169E+00	0.00%
AM243	1.022E+02	0.01%
CM241	7.676E-16	0.00%
CM242	1.458E-01	0.00%
CM243	4.416E-01	0.00%
CM244	2.954E+01	0.00%
CM245	1.335E+00	0.00%
CM246	1.444E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	7.678E-08	0.00%
CF249	8.596E-07	0.00%
CF250	1.449E-07	0.00%
CF251	7.158E-08	0.00%
CF252	1.669E-08	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 5 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	6.651E-02	0.00%
HE 3	6.763E-03	0.00%
HE 4	3.647E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.183E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.881E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	4.206E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.534E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 35	3.402E-10	0.00%
S 36	3.858E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.289E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	4.994E-06	0.00%
AR 37	9.196E-22	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.810E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.718E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.595E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	9.541E-09	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
SC 46	1.881E-11	0.00%

TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 51	3.003E-21	0.00%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	9.849E-04	0.00%
MN 55	7.094E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	3.425E-01	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
FE 59	2.646E-15	0.00%
CO 58	2.961E-09	0.00%
CO 59	8.408E+01	0.01%
CO 60	4.067E+00	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.462E+01	0.00%
NI 60	2.888E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	6.783E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.341E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	7.374E-05	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.581E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	4.852E-04	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	1.900E+01	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.187E+02	0.01%
RB 86	9.002E-32	0.00%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 89	3.480E-10	0.00%
SR 90	5.327E+02	0.04%

Y 89	5.190E+02	0.04%
Y 90	1.335E-01	0.00%
Y 91	1.672E-08	0.00%
ZR 90	1.276E+05	8.86%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 95	1.770E-07	0.00%
ZR 96	8.267E+03	0.57%
NB 93	7.190E+02	0.05%
NB 93M	2.343E-03	0.00%
NB 94	5.977E+00	0.00%
NB 95	2.158E-07	0.00%
NB 95M	7.405E-11	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.865E-02	0.00%
MO 94	3.661E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.595E+02	0.06%
RU 99	1.910E-02	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU103	4.465E-13	0.00%
RU104	5.907E+02	0.04%
RU106	4.895E+00	0.00%
RH102	2.677E-04	0.00%
RH103	4.825E+02	0.03%
RH103M	3.993E-16	0.00%
RH106	4.601E-06	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.762E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.408E-02	0.00%
AG108	1.465E-12	0.00%
AG108M	4.639E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	3.200E-11	0.00%
AG110	8.346E-11	0.00%
AG110M	5.508E-03	0.00%
CD106	3.063E-01	0.00%
CD108	2.204E-01	0.00%
CD109	3.240E-05	0.00%
CD110	4.263E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.757E-01	0.00%
CD113M	2.215E-01	0.00%
CD114	3.438E+01	0.00%
CD115M	3.205E-14	0.00%
CD116	1.082E+01	0.00%
IN113	7.675E-01	0.00%
IN113M	8.234E-10	0.00%
IN114	7.516E-19	0.00%
IN114M	4.672E-14	0.00%
IN115	2.434E+00	0.00%
IN115M	8.915E-21	0.00%
SN112	3.806E+01	0.00%
SN113	1.371E-06	0.00%
SN114	2.653E+01	0.00%

SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN117M	4.931E-41	0.00%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN119M	7.803E-03	0.00%
SN120	1.356E+03	0.09%
SN121M	1.368E-02	0.00%
SN122	2.044E+02	0.01%
SN123	2.453E-05	0.00%
SN124	2.517E+02	0.02%
SN126	2.988E+01	0.00%
SB121	1.086E+01	0.00%
SB123	1.120E+01	0.00%
SB124	6.293E-11	0.00%
SB125	4.507E+00	0.00%
SB126	1.420E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE123M	5.904E-08	0.00%
TE124	5.240E-01	0.00%
TE125	1.840E+01	0.00%
TE125M	6.305E-02	0.00%
TE126	8.817E-01	0.00%
TE127	4.509E-08	0.00%
TE127M	1.288E-05	0.00%
TE128	1.213E+02	0.01%
TE129	5.884E-20	0.00%
TE129M	6.284E-17	0.00%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE127	1.493E-21	0.00%
XE128	3.731E+00	0.00%
XE129	2.145E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE131M	2.309E-47	0.00%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	2.628E+01	0.00%
CS135	4.399E+02	0.03%
CS136	8.878E-43	0.00%
CS137	1.177E+03	0.08%
BA132	1.741E-03	0.00%
BA134	1.726E+02	0.01%
BA135	4.483E-01	0.00%
BA136	2.485E+01	0.00%
BA136M	3.981E-50	0.00%
BA137	2.006E+02	0.01%
BA137M	1.800E-04	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE141	6.321E-16	0.00%
CE142	1.263E+03	0.09%
CE144	3.830E+00	0.00%
PR141	1.251E+03	0.09%
PR143	6.415E-40	0.00%
PR144	1.617E-04	0.00%
PR144M	8.083E-07	0.00%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.465E+03	0.10%

ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND147	1.415E-49	0.00%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	3.145E-03	0.00%
PM147	3.787E+01	0.00%
PM148	4.855E-16	0.00%
PM148M	6.627E-14	0.00%
SM146	7.587E-03	0.00%
SM147	1.847E+02	0.01%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.659E+01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	2.953E-07	0.00%
EU151	6.652E-01	0.00%
EU152	4.225E-02	0.00%
EU153	1.335E+02	0.01%
EU154	2.642E+01	0.00%
EU155	7.588E+00	0.00%
EU156	2.110E-36	0.00%
GD152	6.642E-02	0.00%
GD153	2.654E-05	0.00%
GD154	1.643E+01	0.00%
GD155	7.797E+00	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
TB160	2.361E-09	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.443E-03	0.00%
ER166	4.356E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM170	3.322E-10	0.00%
TM171	8.625E-08	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
LU177	3.354E-12	0.00%
LU177M	3.369E-10	0.00%
HF174	1.235E-02	0.00%
HF175	1.846E-11	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF181	3.071E-15	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	1.077E-07	0.00%
W180	8.108E-03	0.00%
W181	5.397E-09	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W185	1.576E-10	0.00%

W186	1.444E+00	0.00%
W188	2.000E-12	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
RE188	2.060E-14	0.00%
OS186	9.659E-03	0.00%
OS187	4.817E-11	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	4.877E-13	0.00%
TL206	7.867E-17	0.00%
TL207	2.175E-14	0.00%
TL208	2.755E-11	0.00%
TL209	1.092E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.263E-01	0.00%
PB209	4.549E-14	0.00%
PB210	2.319E-10	0.00%
PB211	1.682E-13	0.00%
PB212	1.625E-08	0.00%
PB214	5.395E-15	0.00%
BI208	4.694E-06	0.00%
BI209	3.999E-01	0.00%
BI210	1.427E-13	0.00%
BI210M	3.032E-05	0.00%
BI211	9.925E-15	0.00%
BI212	1.541E-09	0.00%
BI213	1.069E-14	0.00%
BI214	4.007E-15	0.00%
PO210	8.714E-10	0.00%
PO211	1.218E-19	0.00%
PO212	8.156E-20	0.00%
PO213	1.604E-23	0.00%
PO214	5.512E-22	0.00%
PO215	1.409E-19	0.00%
PO216	6.484E-14	0.00%
PO218	6.256E-16	0.00%
AT217	1.284E-19	0.00%
RN219	3.192E-16	0.00%
RN220	2.448E-11	0.00%
RN222	1.150E-12	0.00%
FR221	1.166E-15	0.00%
FR223	1.480E-15	0.00%
RA223	8.108E-11	0.00%
RA224	1.418E-07	0.00%
RA225	5.272E-12	0.00%
RA226	1.790E-07	0.00%
RA228	1.354E-13	0.00%
AC225	3.562E-12	0.00%
AC227	5.732E-08	0.00%
AC228	1.413E-17	0.00%
TH227	1.332E-10	0.00%
TH228	2.750E-05	0.00%
TH229	9.717E-07	0.00%
TH230	4.624E-03	0.00%
TH231	3.808E-08	0.00%
TH232	9.667E-04	0.00%
TH234	1.358E-05	0.00%
PA231	5.247E-04	0.00%
PA233	2.038E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.443E-03	0.00%
U233	2.657E-03	0.00%
U234	2.021E+02	0.01%

U235	9.364E+03	0.65%
U236	4.614E+03	0.32%
U237	3.274E-05	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	2.081E-07	0.00%
NP236	5.012E-04	0.00%
NP237	5.999E+02	0.04%
NP238	4.029E-07	0.00%
NP239	8.783E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	3.775E-04	0.00%
PU237	2.152E-16	0.00%
PU238	1.985E+02	0.01%
PU239	5.991E+03	0.42%
PU240	2.320E+03	0.16%
PU241	1.058E+03	0.07%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	3.360E+02	0.02%
AM242	2.571E-05	0.00%
AM242M	2.149E+00	0.00%
AM243	1.022E+02	0.01%
CM241	5.980E-22	0.00%
CM242	1.152E-02	0.00%
CM243	4.206E-01	0.00%
CM244	2.736E+01	0.00%
CM245	1.335E+00	0.00%
CM246	1.444E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	1.578E-08	0.00%
CF249	9.174E-07	0.00%
CF250	1.303E-07	0.00%
CF251	7.150E-08	0.00%
CF252	9.871E-09	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 10 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	5.023E-02	0.00%
HE 3	1.165E-02	0.00%
HE 4	3.957E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.183E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.880E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	4.184E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.521E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 35	1.925E-16	0.00%
S 36	3.858E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.289E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	8.709E-06	0.00%
AR 37	1.848E-37	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.787E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.725E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.595E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	4.038E-12	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
SC 46	5.174E-18	0.00%

TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 51	4.333E-41	0.00%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	1.715E-05	0.00%
MN 55	7.097E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	9.033E-02	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
FE 59	1.607E-27	0.00%
CO 58	5.056E-17	0.00%
CO 59	8.408E+01	0.01%
CO 60	2.107E+00	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.462E+01	0.00%
NI 60	2.890E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	6.532E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.366E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	4.105E-07	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.580E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	8.364E-04	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	1.376E+01	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.240E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 89	4.516E-21	0.00%
SR 90	4.729E+02	0.03%
Y 89	5.190E+02	0.04%

Y 90	1.186E-01	0.00%
Y 91	6.714E-18	0.00%
ZR 90	1.277E+05	8.87%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 95	4.524E-16	0.00%
ZR 96	8.267E+03	0.57%
NB 93	7.190E+02	0.05%
NB 93M	3.593E-03	0.00%
NB 94	5.976E+00	0.00%
NB 95	5.517E-16	0.00%
NB 95M	1.893E-19	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.863E-02	0.00%
MO 94	3.661E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.595E+02	0.06%
RU 99	3.309E-02	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU103	4.517E-27	0.00%
RU104	5.907E+02	0.04%
RU106	1.572E-01	0.00%
RH102	8.101E-05	0.00%
RH103	4.825E+02	0.03%
RH103M	4.040E-30	0.00%
RH106	1.478E-07	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.810E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.421E-02	0.00%
AG108	1.425E-12	0.00%
AG108M	4.513E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	2.091E-12	0.00%
AG110	5.266E-13	0.00%
AG110M	3.474E-05	0.00%
CD106	3.063E-01	0.00%
CD108	2.204E-01	0.00%
CD109	2.117E-06	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.758E-01	0.00%
CD113M	1.747E-01	0.00%
CD114	3.438E+01	0.00%
CD115M	1.506E-26	0.00%
CD116	1.082E+01	0.00%
IN113	8.144E-01	0.00%
IN113M	1.379E-14	0.00%
IN114	5.928E-30	0.00%
IN114M	3.686E-25	0.00%
IN115	2.434E+00	0.00%
IN115M	4.191E-33	0.00%
SN112	3.806E+01	0.00%
SN113	2.296E-11	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%

SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN119M	4.452E-05	0.00%
SN120	1.356E+03	0.09%
SN121M	1.276E-02	0.00%
SN122	2.044E+02	0.01%
SN123	1.360E-09	0.00%
SN124	2.517E+02	0.02%
SN126	2.988E+01	0.00%
SB121	1.086E+01	0.00%
SB123	1.120E+01	0.00%
SB124	4.637E-20	0.00%
SB125	1.290E+00	0.00%
SB126	1.420E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE123M	1.505E-12	0.00%
TE124	5.240E-01	0.00%
TE125	2.167E+01	0.00%
TE125M	1.804E-02	0.00%
TE126	8.827E-01	0.00%
TE127	4.079E-13	0.00%
TE127M	1.165E-10	0.00%
TE128	1.213E+02	0.01%
TE129	2.557E-36	0.00%
TE129M	2.730E-33	0.00%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE127	1.191E-36	0.00%
XE128	3.731E+00	0.00%
XE129	2.149E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	4.893E+00	0.00%
CS135	4.399E+02	0.03%
CS137	1.048E+03	0.07%
BA132	1.741E-03	0.00%
BA134	1.940E+02	0.01%
BA135	4.490E-01	0.00%
BA136	2.485E+01	0.00%
BA137	3.289E+02	0.02%
BA137M	1.604E-04	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE141	7.786E-33	0.00%
CE142	1.263E+03	0.09%
CE144	4.459E-02	0.00%
PR141	1.251E+03	0.09%
PR144	1.883E-06	0.00%
PR144M	9.410E-09	0.00%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	1.675E-03	0.00%
PM147	1.011E+01	0.00%

PM148	2.364E-29	0.00%
PM148M	3.227E-27	0.00%
SM146	8.134E-03	0.00%
SM147	2.124E+02	0.01%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.597E+01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	2.681E-07	0.00%
EU151	1.292E+00	0.00%
EU152	3.274E-02	0.00%
EU153	1.335E+02	0.01%
EU154	1.766E+01	0.00%
EU155	3.772E+00	0.00%
GD152	6.906E-02	0.00%
GD153	1.420E-07	0.00%
GD154	2.519E+01	0.00%
GD155	1.161E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
TB160	5.882E-17	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.439E-03	0.00%
ER166	4.357E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM170	1.762E-14	0.00%
TM171	1.418E-08	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
LU177	9.516E-16	0.00%
LU177M	9.562E-14	0.00%
HF174	1.235E-02	0.00%
HF175	2.585E-19	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF181	3.312E-28	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.327E-11	0.00%
W180	8.108E-03	0.00%
W181	1.569E-13	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W185	7.538E-18	0.00%
W186	1.444E+00	0.00%
W188	2.395E-20	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
RE188	2.467E-22	0.00%
OS186	9.659E-03	0.00%
OS187	8.657E-11	0.00%
OS188	9.784E-02	0.00%

OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	4.633E-13	0.00%
TL206	7.867E-17	0.00%
TL207	3.854E-14	0.00%
TL208	3.919E-11	0.00%
TL209	1.171E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.263E-01	0.00%
PB209	4.881E-14	0.00%
PB210	7.683E-10	0.00%
PB211	2.981E-13	0.00%
PB212	2.311E-08	0.00%
PB214	1.345E-14	0.00%
BI208	4.694E-06	0.00%
BI209	3.999E-01	0.00%
BI210	4.728E-13	0.00%
BI210M	3.032E-05	0.00%
BI211	1.760E-14	0.00%
BI212	2.193E-09	0.00%
BI213	1.147E-14	0.00%
BI214	9.988E-15	0.00%
PO210	1.317E-11	0.00%
PO211	2.158E-19	0.00%
PO212	1.160E-19	0.00%
PO213	1.721E-23	0.00%
PO214	1.375E-21	0.00%
PO215	2.497E-19	0.00%
PO216	9.224E-14	0.00%
PO218	1.560E-15	0.00%
AT217	1.378E-19	0.00%
RN219	5.657E-16	0.00%
RN220	3.482E-11	0.00%
RN222	2.868E-12	0.00%
FR221	1.251E-15	0.00%
FR223	2.623E-15	0.00%
RA223	1.437E-10	0.00%
RA224	2.016E-07	0.00%
RA225	5.657E-12	0.00%
RA226	4.461E-07	0.00%
RA228	3.328E-13	0.00%
AC225	3.821E-12	0.00%
AC227	1.016E-07	0.00%
AC228	3.474E-17	0.00%
TH227	2.361E-10	0.00%
TH228	3.916E-05	0.00%
TH229	1.042E-06	0.00%
TH230	7.496E-03	0.00%
TH231	3.808E-08	0.00%
TH232	1.639E-03	0.00%
TH234	1.358E-05	0.00%
PA231	5.713E-04	0.00%
PA233	2.049E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.629E-03	0.00%
U233	3.615E-03	0.00%
U234	2.102E+02	0.01%
U235	9.364E+03	0.65%
U236	4.615E+03	0.32%
U237	2.574E-05	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	8.517E-09	0.00%
NP236	5.012E-04	0.00%
NP237	6.035E+02	0.04%

NP238	3.938E-07	0.00%
NP239	8.781E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	1.120E-04	0.00%
PU237	1.891E-28	0.00%
PU238	1.909E+02	0.01%
PU239	5.990E+03	0.42%
PU240	2.325E+03	0.16%
PU241	8.313E+02	0.06%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	5.587E+02	0.04%
AM242	2.512E-05	0.00%
AM242M	2.100E+00	0.00%
AM243	1.022E+02	0.01%
CM241	3.204E-37	0.00%
CM242	5.085E-03	0.00%
CM243	3.724E-01	0.00%
CM244	2.259E+01	0.00%
CM245	1.334E+00	0.00%
CM246	1.443E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	3.020E-10	0.00%
CF249	9.233E-07	0.00%
CF250	9.999E-08	0.00%
CF251	7.118E-08	0.00%
CF252	2.654E-09	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 15 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	3.794E-02	0.00%
HE 3	1.533E-02	0.00%
HE 4	4.274E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.183E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.878E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	4.161E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.507E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 35	1.089E-22	0.00%
S 36	3.858E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.289E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	1.242E-05	0.00%
AR 37	3.714E-53	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.765E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.732E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.595E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	1.709E-15	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
SC 46	1.423E-24	0.00%

TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 51	6.251E-61	0.00%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	2.985E-07	0.00%
MN 55	7.097E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	2.382E-02	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
FE 59	9.750E-40	0.00%
CO 58	8.633E-25	0.00%
CO 59	8.408E+01	0.01%
CO 60	1.091E+00	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.462E+01	0.00%
NI 60	2.891E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	6.290E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.390E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	2.286E-09	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.580E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	1.187E-03	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	9.956E+00	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.278E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 89	5.862E-32	0.00%
SR 90	4.198E+02	0.03%
Y. 89	5.190E+02	0.04%

Y 90	1.053E-01	0.00%
Y 91	2.695E-27	0.00%
ZR 90	1.277E+05	8.87%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 95	1.156E-24	0.00%
ZR 96	8.267E+03	0.57%
NB 93	7.190E+02	0.05%
NB 93M	4.562E-03	0.00%
NB 94	5.975E+00	0.00%
NB 95	1.410E-24	0.00%
NB 95M	4.838E-28	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.862E-02	0.00%
MO 94	3.661E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.595E+02	0.06%
RU 99	4.708E-02	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU103	4.570E-41	0.00%
RU104	5.907E+02	0.04%
RU106	5.051E-03	0.00%
RH102	2.452E-05	0.00%
RH103	4.825E+02	0.03%
RH103M	4.086E-44	0.00%
RH106	4.747E-09	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.434E-02	0.00%
AG108	1.387E-12	0.00%
AG108M	4.392E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	1.366E-13	0.00%
AG110	3.322E-15	0.00%
AG110M	2.192E-07	0.00%
CD106	3.063E-01	0.00%
CD108	2.204E-01	0.00%
CD109	1.383E-07	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.758E-01	0.00%
CD113M	1.378E-01	0.00%
CD114	3.438E+01	0.00%
CD115M	7.083E-39	0.00%
CD116	1.082E+01	0.00%
IN113	8.515E-01	0.00%
IN113M	2.308E-19	0.00%
IN114	4.675E-41	0.00%
IN114M	2.907E-36	0.00%
IN115	2.434E+00	0.00%
IN115M	1.971E-45	0.00%
SN112	3.806E+01	0.00%
SN113	3.843E-16	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%

SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN119M	2.541E-07	0.00%
SN120	1.356E+03	0.09%
SN121M	1.191E-02	0.00%
SN122	2.044E+02	0.01%
SN123	7.539E-14	0.00%
SN124	2.517E+02	0.02%
SN126	2.988E+01	0.00%
SB121	1.086E+01	0.00%
SB123	1.120E+01	0.00%
SB124	3.416E-29	0.00%
SB125	3.691E-01	0.00%
SB126	1.420E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE123M	3.835E-17	0.00%
TE124	5.240E-01	0.00%
TE125	2.260E+01	0.00%
TE125M	5.162E-03	0.00%
TE126	8.836E-01	0.00%
TE127	3.691E-18	0.00%
TE127M	1.054E-15	0.00%
TE128	1.213E+02	0.01%
TE129	1.111E-52	0.00%
TE129M	1.186E-49	0.00%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE127	9.495E-52	0.00%
XE128	3.731E+00	0.00%
XE129	2.154E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	9.111E-01	0.00%
CS135	4.399E+02	0.03%
CS137	9.337E+02	0.06%
BA132	1.741E-03	0.00%
BA134	1.980E+02	0.01%
BA135	4.498E-01	0.00%
BA136	2.485E+01	0.00%
BA137	4.433E+02	0.03%
BA137M	1.428E-04	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
CE144	5.190E-04	0.00%
PR141	1.251E+03	0.09%
PR144	2.191E-08	0.00%
PR144M	1.095E-10	0.00%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	8.918E-04	0.00%
PM147	2.697E+00	0.00%
PM148	1.151E-42	0.00%

PM148M	1.572E-40	0.00%
SM146	8.430E-03	0.00%
SM147	2.198E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.537E+01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	2.435E-07	0.00%
EU151	1.896E+00	0.00%
EU152	2.538E-02	0.00%
EU153	1.335E+02	0.01%
EU154	1.180E+01	0.00%
EU155	1.876E+00	0.00%
GD152	7.112E-02	0.00%
GD153	7.598E-10	0.00%
GD154	3.104E+01	0.00%
GD155	1.351E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
TB160	1.465E-24	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.435E-03	0.00%
ER166	4.357E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM170	9.352E-19	0.00%
TM171	2.332E-09	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
LU177	2.703E-19	0.00%
LU177M	2.715E-17	0.00%
HF174	1.235E-02	0.00%
HF175	3.621E-27	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF181	3.571E-41	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.147E-11	0.00%
W180	8.108E-03	0.00%
W181	4.558E-18	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W185	3.605E-25	0.00%
W186	1.444E+00	0.00%
W188	2.868E-28	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
RE188	2.954E-30	0.00%
OS186	9.659E-03	0.00%
OS187	1.250E-10	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%

OS190	3.954E-04	0.00%
IR192	4.566E-13	0.00%
TL206	7.867E-17	0.00%
TL207	5.458E-14	0.00%
TL208	4.216E-11	0.00%
TL209	1.274E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.264E-01	0.00%
PB209	5.309E-14	0.00%
PB210	1.846E-09	0.00%
PB211	4.222E-13	0.00%
PB212	2.486E-08	0.00%
PB214	2.538E-14	0.00%
BI208	4.694E-06	0.00%
BI209	3.999E-01	0.00%
BI210	1.136E-12	0.00%
BI210M	3.032E-05	0.00%
BI211	2.491E-14	0.00%
BI212	2.359E-09	0.00%
BI213	1.247E-14	0.00%
BI214	1.885E-14	0.00%
PO210	3.141E-11	0.00%
PO211	3.056E-19	0.00%
PO212	1.248E-19	0.00%
PO213	1.872E-23	0.00%
PO214	2.593E-21	0.00%
PO215	3.536E-19	0.00%
PO216	9.926E-14	0.00%
PO218	2.944E-15	0.00%
AT217	1.499E-19	0.00%
RN219	8.012E-16	0.00%
RN220	3.745E-11	0.00%
RN222	5.412E-12	0.00%
FR221	1.361E-15	0.00%
FR223	3.713E-15	0.00%
RA223	2.035E-10	0.00%
RA224	2.169E-07	0.00%
RA225	6.153E-12	0.00%
RA226	8.419E-07	0.00%
RA228	5.776E-13	0.00%
AC225	4.157E-12	0.00%
AC227	1.439E-07	0.00%
AC228	6.030E-17	0.00%
TH227	3.344E-10	0.00%
TH228	4.212E-05	0.00%
TH229	1.134E-06	0.00%
TH230	1.048E-02	0.00%
TH231	3.809E-08	0.00%
TH232	2.310E-03	0.00%
TH234	1.358E-05	0.00%
PA231	6.176E-04	0.00%
PA233	2.067E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.627E-03	0.00%
U233	4.580E-03	0.00%
U234	2.178E+02	0.02%
U235	9.364E+03	0.65%
U236	4.617E+03	0.32%
U237	2.023E-05	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	3.484E-10	0.00%
NP236	5.012E-04	0.00%
NP237	6.086E+02	0.04%
NP238	3.849E-07	0.00%

NP239	8.776E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	3.319E-05	0.00%
PU237	1.662E-40	0.00%
PU238	1.835E+02	0.01%
PU239	5.989E+03	0.42%
PU240	2.328E+03	0.16%
PU241	6.535E+02	0.05%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	7.313E+02	0.05%
AM242	2.456E-05	0.00%
AM242M	2.053E+00	0.00%
AM243	1.021E+02	0.01%
CM241	1.717E-52	0.00%
CM242	4.968E-03	0.00%
CM243	3.298E-01	0.00%
CM244	1.866E+01	0.00%
CM245	1.334E+00	0.00%
CM246	1.442E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	5.784E-12	0.00%
CF249	9.148E-07	0.00%
CF250	7.670E-08	0.00%
CF251	7.091E-08	0.00%
CF252	7.132E-10	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 20 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	2.865E-02	0.00%
HE 3	1.811E-02	0.00%
HE 4	4.595E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.183E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.877E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	4.140E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.493E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 35	6.166E-29	0.00%
S 36	3.858E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.289E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	1.614E-05	0.00%
AR 37	7.462E-69	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.742E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.739E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.595E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	7.229E-19	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
SC 46	3.914E-31	0.00%

TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 51	9.019E-81	0.00%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	5.198E-09	0.00%
MN 55	7.097E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	6.281E-03	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
FE 59	5.918E-52	0.00%
CO 58	1.474E-32	0.00%
CO 59	8.409E+01	0.01%
CO 60	5.655E-01	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.462E+01	0.00%
NI 60	2.891E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	6.058E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.413E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	1.273E-11	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.580E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	1.538E-03	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	7.204E+00	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.305E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 89	7.608E-43	0.00%
SR 90	3.728E+02	0.03%
Y 89	5.190E+02	0.04%

Y 90	9.348E-02	0.00%
Y 91	1.081E-36	0.00%
ZR 90	1.278E+05	8.88%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 95	2.956E-33	0.00%
ZR 96	8.267E+03	0.57%
NB 93	7.190E+02	0.05%
NB 93M	5.313E-03	0.00%
NB 94	5.974E+00	0.00%
NB 95	3.605E-33	0.00%
NB 95M	1.237E-36	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.860E-02	0.00%
MO 94	3.661E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.595E+02	0.06%
RU 99	6.107E-02	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU103	4.622E-55	0.00%
RU104	5.907E+02	0.04%
RU106	1.622E-04	0.00%
RH102	7.422E-06	0.00%
RH103	4.825E+02	0.03%
RH103M	4.134E-58	0.00%
RH106	1.525E-10	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.446E-02	0.00%
AG108	1.350E-12	0.00%
AG108M	4.274E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	8.927E-15	0.00%
AG110	2.096E-17	0.00%
AG110M	1.383E-09	0.00%
CD106	3.063E-01	0.00%
CD108	2.204E-01	0.00%
CD109	9.038E-09	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.758E-01	0.00%
CD113M	1.086E-01	0.00%
CD114	3.438E+01	0.00%
CD115M	3.330E-51	0.00%
CD116	1.082E+01	0.00%
IN113	8.806E-01	0.00%
IN113M	3.865E-24	0.00%
IN114	3.688E-52	0.00%
IN114M	2.293E-47	0.00%
IN115	2.434E+00	0.00%
IN115M	9.264E-58	0.00%
SN112	3.806E+01	0.00%
SN113	6.435E-21	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%

SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN119M	1.449E-09	0.00%
SN120	1.356E+03	0.09%
SN121M	1.111E-02	0.00%
SN122	2.044E+02	0.01%
SN123	4.180E-18	0.00%
SN124	2.517E+02	0.02%
SN126	2.988E+01	0.00%
SB121	1.086E+01	0.00%
SB123	1.120E+01	0.00%
SB124	2.517E-38	0.00%
SB125	1.056E-01	0.00%
SB126	1.420E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE123M	9.775E-22	0.00%
TE124	5.240E-01	0.00%
TE125	2.287E+01	0.00%
TE125M	1.477E-03	0.00%
TE126	8.846E-01	0.00%
TE127	3.341E-23	0.00%
TE127M	9.542E-21	0.00%
TE128	1.213E+02	0.01%
TE129	4.827E-69	0.00%
TE129M	5.154E-66	0.00%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE127	7.574E-67	0.00%
XE128	3.731E+00	0.00%
XE129	2.159E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	1.697E-01	0.00%
CS135	4.399E+02	0.03%
CS137	8.319E+02	0.06%
BA132	1.741E-03	0.00%
BA134	1.987E+02	0.01%
BA135	4.505E-01	0.00%
BA136	2.485E+01	0.00%
BA137	5.452E+02	0.04%
BA137M	1.273E-04	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
CE144	6.041E-06	0.00%
PR141	1.251E+03	0.09%
PR144	2.551E-10	0.00%
PR144M	1.275E-12	0.00%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	4.749E-04	0.00%
PM147	7.195E-01	0.00%
PM148	5.607E-56	0.00%

PM148M	7.654E-54	0.00%
SM146	8.583E-03	0.00%
SM147	2.218E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.478E+01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	2.212E-07	0.00%
EU151	2.476E+00	0.00%
EU152	1.967E-02	0.00%
EU153	1.335E+02	0.01%
EU154	7.886E+00	0.00%
EU155	9.323E-01	0.00%
GD152	7.272E-02	0.00%
GD153	4.066E-12	0.00%
GD154	3.497E+01	0.00%
GD155	1.445E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
TB160	3.653E-32	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.431E-03	0.00%
ER166	4.358E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM170	4.959E-23	0.00%
TM171	3.835E-10	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
LU177	7.674E-23	0.00%
LU177M	7.710E-21	0.00%
HF174	1.235E-02	0.00%
HF175	5.072E-35	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF181	3.852E-54	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.147E-11	0.00%
W180	8.108E-03	0.00%
W181	1.324E-22	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W185	1.725E-32	0.00%
W186	1.444E+00	0.00%
W188	3.433E-36	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
RE188	3.537E-38	0.00%
OS186	9.659E-03	0.00%
OS187	1.634E-10	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%

OS190	3.954E-04	0.00%
IR192	4.501E-13	0.00%
TL206	7.867E-17	0.00%
TL207	6.994E-14	0.00%
TL208	4.175E-11	0.00%
TL209	1.400E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.265E-01	0.00%
PB209	5.834E-14	0.00%
PB210	3.633E-09	0.00%
PB211	5.411E-13	0.00%
PB212	2.463E-08	0.00%
PB214	4.133E-14	0.00%
BI208	4.693E-06	0.00%
BI209	3.999E-01	0.00%
BI210	2.236E-12	0.00%
BI210M	3.032E-05	0.00%
BI211	3.192E-14	0.00%
BI212	2.336E-09	0.00%
BI213	1.371E-14	0.00%
BI214	3.070E-14	0.00%
PO210	6.177E-11	0.00%
PO211	3.917E-19	0.00%
PO212	1.236E-19	0.00%
PO213	2.057E-23	0.00%
PO214	4.223E-21	0.00%
PO215	4.531E-19	0.00%
PO216	9.825E-14	0.00%
PO218	4.793E-15	0.00%
AT217	1.647E-19	0.00%
RN219	1.027E-15	0.00%
RN220	3.710E-11	0.00%
RN222	8.814E-12	0.00%
FR221	1.495E-15	0.00%
FR223	4.758E-15	0.00%
RA223	2.608E-10	0.00%
RA224	2.148E-07	0.00%
RA225	6.762E-12	0.00%
RA226	1.371E-06	0.00%
RA228	8.507E-13	0.00%
AC225	4.568E-12	0.00%
AC227	1.843E-07	0.00%
AC228	8.880E-17	0.00%
TH227	4.286E-10	0.00%
TH228	4.171E-05	0.00%
TH229	1.246E-06	0.00%
TH230	1.356E-02	0.00%
TH231	3.809E-08	0.00%
TH232	2.982E-03	0.00%
TH234	1.358E-05	0.00%
PA231	6.638E-04	0.00%
PA233	2.089E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.574E-03	0.00%
U233	5.554E-03	0.00%
U234	2.252E+02	0.02%
U235	9.365E+03	0.65%
U236	4.618E+03	0.32%
U237	1.590E-05	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	1.426E-11	0.00%
NP236	5.011E-04	0.00%
NP237	6.150E+02	0.04%
NP238	3.762E-07	0.00%

NP239	8.774E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	9.845E-06	0.00%
PU237	1.461E-52	0.00%
PU238	1.765E+02	0.01%
PU239	5.989E+03	0.42%
PU240	2.330E+03	0.16%
PU241	5.137E+02	0.04%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	8.647E+02	0.06%
AM242	2.401E-05	0.00%
AM242M	2.006E+00	0.00%
AM243	1.021E+02	0.01%
CM241	9.199E-68	0.00%
CM242	4.856E-03	0.00%
CM243	2.920E-01	0.00%
CM244	1.541E+01	0.00%
CM245	1.333E+00	0.00%
CM246	1.441E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	1.108E-13	0.00%
CF249	9.057E-07	0.00%
CF250	5.885E-08	0.00%
CF251	7.064E-08	0.00%
CF252	1.917E-10	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 30 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	1.635E-02	0.00%
HE 3	2.181E-02	0.00%
HE 4	5.239E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.183E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.873E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	4.096E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.467E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 35	1.975E-41	0.00%
S 36	3.859E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.288E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	2.357E-05	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.698E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.753E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.594E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	1.295E-25	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
SC 46	2.961E-44	0.00%
TI 46	8.777E+00	0.00%

TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	1.576E-12	0.00%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	4.368E-04	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 58	4.299E-48	0.00%
CO 59	8.409E+01	0.01%
CO 60	1.518E-01	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.461E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	5.618E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.458E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	3.945E-16	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.579E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	2.240E-03	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	3.774E+00	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.340E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 90	2.938E+02	0.02%
Y 89	5.190E+02	0.04%
Y 90	7.367E-02	0.00%
Y 91	1.743E-55	0.00%
ZR 90	1.279E+05	8.88%
ZR 91	2.862E+04	1.99%

ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 95	1.931E-50	0.00%
ZR 96	8.267E+03	0.57%
NB 93	7.190E+02	0.05%
NB 93M	6.345E-03	0.00%
NB 94	5.971E+00	0.00%
NB 95	2.355E-50	0.00%
NB 95M	8.080E-54	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.856E-02	0.00%
MO 94	3.661E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.595E+02	0.06%
RU 99	8.903E-02	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RU106	1.674E-07	0.00%
RH102	6.800E-07	0.00%
RH103	4.825E+02	0.03%
RH106	1.573E-13	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.471E-02	0.00%
AG108	1.278E-12	0.00%
AG108M	4.047E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	3.811E-17	0.00%
AG110	8.340E-22	0.00%
AG110M	5.505E-14	0.00%
CD106	3.063E-01	0.00%
CD108	2.204E-01	0.00%
CD109	3.858E-11	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD113M	6.755E-02	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.217E-01	0.00%
IN113M	1.084E-33	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN113	1.804E-30	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN119M	4.719E-14	0.00%
SN120	1.356E+03	0.09%
SN121M	9.670E-03	0.00%
SN122	2.044E+02	0.01%
SN123	1.285E-26	0.00%
SN124	2.517E+02	0.02%

SN126	2.988E+01	0.00%
SB121	1.086E+01	0.00%
SB123	1.120E+01	0.00%
SB124	1.366E-56	0.00%
SB125	8.646E-03	0.00%
SB126	1.420E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE123M	6.349E-31	0.00%
TE124	5.240E-01	0.00%
TE125	2.296E+01	0.00%
TE125M	1.210E-04	0.00%
TE126	8.870E-01	0.00%
TE127	2.735E-33	0.00%
TE127M	7.813E-31	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE128	3.731E+00	0.00%
XE129	2.168E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	5.884E-03	0.00%
CS135	4.399E+02	0.03%
CS137	6.602E+02	0.05%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	4.518E-01	0.00%
BA136	2.485E+01	0.00%
BA137	7.169E+02	0.05%
BA137M	1.010E-04	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
CE144	8.188E-10	0.00%
PR141	1.251E+03	0.09%
PR144	3.457E-14	0.00%
PR144M	1.728E-16	0.00%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	1.347E-04	0.00%
PM147	5.124E-02	0.00%
SM146	8.711E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.369E+01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	1.824E-07	0.00%
EU151	3.571E+00	0.00%
EU152	1.182E-02	0.00%
EU153	1.335E+02	0.01%
EU154	3.522E+00	0.00%
EU155	2.304E-01	0.00%

GD152	7.491E-02	0.00%
GD153	1.163E-16	0.00%
GD154	3.932E+01	0.00%
GD155	1.516E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
TB160	2.268E-47	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.423E-03	0.00%
ER166	4.359E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM170	1.395E-31	0.00%
TM171	1.038E-11	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
LU177	6.186E-30	0.00%
LU177M	6.215E-28	0.00%
HF174	1.235E-02	0.00%
HF175	9.950E-51	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.147E-11	0.00%
W180	8.108E-03	0.00%
W181	1.119E-31	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W185	3.944E-47	0.00%
W186	1.444E+00	0.00%
W188	4.923E-52	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
RE188	5.071E-54	0.00%
OS186	9.659E-03	0.00%
OS187	2.402E-10	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	4.373E-13	0.00%
TL206	7.867E-17	0.00%
TL207	9.900E-14	0.00%
TL208	3.852E-11	0.00%
TL209	1.723E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.266E-01	0.00%
PB209	7.176E-14	0.00%
PB210	9.917E-09	0.00%
PB211	7.657E-13	0.00%
PB212	2.272E-08	0.00%
PB214	8.578E-14	0.00%

BI208	4.693E-06	0.00%
BI209	3.999E-01	0.00%
BI210	6.103E-12	0.00%
BI210M	3.032E-05	0.00%
BI211	4.517E-14	0.00%
BI212	2.155E-09	0.00%
BI213	1.686E-14	0.00%
BI214	6.369E-14	0.00%
PO210	1.685E-10	0.00%
PO211	5.543E-19	0.00%
PO212	1.141E-19	0.00%
PO213	2.529E-23	0.00%
PO214	8.764E-21	0.00%
PO215	6.412E-19	0.00%
PO216	9.067E-14	0.00%
PO218	9.946E-15	0.00%
AT217	2.026E-19	0.00%
RN219	1.453E-15	0.00%
RN220	3.423E-11	0.00%
RN222	1.829E-11	0.00%
FR221	1.839E-15	0.00%
FR223	6.736E-15	0.00%
RA223	3.691E-10	0.00%
RA224	1.982E-07	0.00%
RA225	8.318E-12	0.00%
RA226	2.844E-06	0.00%
RA228	1.441E-12	0.00%
AC225	5.618E-12	0.00%
AC227	2.610E-07	0.00%
AC228	1.504E-16	0.00%
TH227	6.064E-10	0.00%
TH228	3.851E-05	0.00%
TH229	1.533E-06	0.00%
TH230	2.003E-02	0.00%
TH231	3.810E-08	0.00%
TH232	4.327E-03	0.00%
TH234	1.358E-05	0.00%
PA231	7.558E-04	0.00%
PA233	2.141E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.437E-03	0.00%
U233	7.536E-03	0.00%
U234	2.389E+02	0.02%
U235	9.369E+03	0.65%
U236	4.620E+03	0.32%
U237	9.829E-06	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	2.388E-14	0.00%
NP236	5.011E-04	0.00%
NP237	6.302E+02	0.04%
NP238	3.595E-07	0.00%
NP239	8.762E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	8.666E-07	0.00%
PU238	1.631E+02	0.01%
PU239	5.987E+03	0.42%
PU240	2.333E+03	0.16%
PU241	3.174E+02	0.02%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	1.046E+03	0.07%
AM242	2.294E-05	0.00%
AM242M	1.917E+00	0.00%
AM243	1.020E+02	0.01%
CM242	4.637E-03	0.00%
CM243	2.289E-01	0.00%

CM244	1.051E+01	0.00%
CM245	1.332E+00	0.00%
CM246	1.439E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	4.061E-17	0.00%
CF249	8.882E-07	0.00%
CF250	3.464E-08	0.00%
CF251	7.010E-08	0.00%
CF252	1.386E-11	0.00%
TOTAL	*1.440E+06	99.99%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 50 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	5.320E-03	0.00%
HE 3	2.511E-02	0.00%
HE 4	6.498E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.183E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.866E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	4.009E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.415E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	3.859E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.288E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	3.843E-05	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.612E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.780E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.594E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	4.150E-39	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%

TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	1.447E-19	0.00%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	2.111E-06	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.409E+01	0.01%
CO 60	1.093E-02	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.461E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	4.832E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.537E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 65	3.790E-25	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.578E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	3.645E-03	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	1.036E+00	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.367E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 90	1.825E+02	0.01%
Y 89	5.190E+02	0.04%
Y 90	4.577E-02	0.00%
ZR 90	1.280E+05	8.89%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%

NB 93	7.190E+02	0.05%
NB 93M	7.339E-03	0.00%
NB 94	5.968E+00	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.849E-02	0.00%
MO 94	3.662E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.594E+02	0.06%
RU 99	1.450E-01	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RU106	1.782E-13	0.00%
RH102	5.708E-09	0.00%
RH103	4.825E+02	0.03%
RH106	1.675E-19	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.522E-02	0.00%
AG108	1.145E-12	0.00%
AG108M	3.628E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	6.948E-22	0.00%
AG110	1.322E-30	0.00%
AG110M	8.720E-23	0.00%
CD106	3.063E-01	0.00%
CD108	2.204E-01	0.00%
CD109	7.034E-16	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD113M	2.612E-02	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.634E-01	0.00%
IN113M	8.515E-53	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN113	1.418E-49	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN119M	5.001E-23	0.00%
SN120	1.356E+03	0.09%
SN121M	7.329E-03	0.00%
SN122	2.044E+02	0.01%
SN123	1.214E-43	0.00%
SN124	2.517E+02	0.02%
SN126	2.988E+01	0.00%
SB121	1.086E+01	0.00%
SB123	1.120E+01	0.00%
SB125	5.798E-05	0.00%
SB126	1.419E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%

TE123	1.233E-02	0.00%
TE123M	2.678E-49	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE125M	8.109E-07	0.00%
TE126	8.908E-01	0.00%
TE127	1.834E-53	0.00%
TE127M	5.237E-51	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE128	3.731E+00	0.00%
XE129	2.186E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	7.076E-06	0.00%
CS135	4.399E+02	0.03%
CS137	4.159E+02	0.03%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	4.547E-01	0.00%
BA136	2.485E+01	0.00%
BA137	9.610E+02	0.07%
BA137M	6.363E-05	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
CE144	1.504E-17	0.00%
PR141	1.251E+03	0.09%
PR144	6.349E-22	0.00%
PR144M	3.174E-24	0.00%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	1.083E-05	0.00%
PM147	2.598E-04	0.00%
SM146	8.756E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.173E+01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	1.241E-07	0.00%
EU151	5.526E+00	0.00%
EU152	4.263E-03	0.00%
EU153	1.335E+02	0.01%
EU154	7.027E-01	0.00%
EU155	1.408E-02	0.00%
GD152	7.702E-02	0.00%
GD153	9.543E-26	0.00%
GD154	4.215E+01	0.00%
GD155	1.537E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%

TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.406E-03	0.00%
ER166	4.360E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM170	1.106E-48	0.00%
TM171	7.590E-15	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
LU177	4.019E-44	0.00%
LU177M	4.038E-42	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.147E-11	0.00%
W180	8.108E-03	0.00%
W181	7.982E-50	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	3.937E-10	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	4.129E-13	0.00%
TL206	7.867E-17	0.00%
TL207	1.523E-13	0.00%
TL208	3.185E-11	0.00%
TL209	2.655E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.269E-01	0.00%
PB209	1.106E-13	0.00%
PB210	3.675E-08	0.00%
PB211	1.179E-12	0.00%
PB212	1.879E-08	0.00%
PB214	2.281E-13	0.00%
BI208	4.693E-06	0.00%
BI209	3.999E-01	0.00%
BI210	2.262E-11	0.00%
BI210M	3.032E-05	0.00%
BI211	6.952E-14	0.00%
BI212	1.782E-09	0.00%
BI213	2.599E-14	0.00%
BI214	1.694E-13	0.00%
PO210	6.247E-10	0.00%
PO211	8.529E-19	0.00%
PO212	9.427E-20	0.00%
PO213	3.899E-23	0.00%
PO214	2.330E-20	0.00%

PO215	9.865E-19	0.00%
PO216	7.496E-14	0.00%
PO218	2.645E-14	0.00%
AT217	3.122E-19	0.00%
RN219	2.236E-15	0.00%
RN220	2.830E-11	0.00%
RN222	4.863E-11	0.00%
FR221	2.835E-15	0.00%
FR223	1.037E-14	0.00%
RA223	5.680E-10	0.00%
RA224	1.639E-07	0.00%
RA225	1.282E-11	0.00%
RA226	7.565E-06	0.00%
RA228	2.682E-12	0.00%
AC225	8.658E-12	0.00%
AC227	4.018E-07	0.00%
AC228	2.800E-16	0.00%
TH227	9.333E-10	0.00%
TH228	3.184E-05	0.00%
TH229	2.362E-06	0.00%
TH230	3.405E-02	0.00%
TH231	3.811E-08	0.00%
TH232	7.017E-03	0.00%
TH234	1.358E-05	0.00%
PA231	9.387E-04	0.00%
PA233	2.264E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.186E-03	0.00%
U233	1.166E-02	0.00%
U234	2.635E+02	0.02%
U235	9.371E+03	0.65%
U236	4.625E+03	0.32%
U237	3.753E-06	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	6.696E-20	0.00%
NP236	5.011E-04	0.00%
NP237	6.665E+02	0.05%
NP238	3.282E-07	0.00%
NP239	8.746E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	7.808E-09	0.00%
PU238	1.395E+02	0.01%
PU239	5.984E+03	0.42%
PU240	2.334E+03	0.16%
PU241	1.213E+02	0.01%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	1.205E+03	0.08%
AM242	2.094E-05	0.00%
AM242M	1.750E+00	0.00%
AM243	1.018E+02	0.01%
CM242	4.233E-03	0.00%
CM243	1.408E-01	0.00%
CM244	4.888E+00	0.00%
CM245	1.330E+00	0.00%
CM246	1.435E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	5.460E-24	0.00%
CF249	8.534E-07	0.00%
CF250	1.201E-08	0.00%
CF251	6.902E-08	0.00%
CF252	7.235E-14	0.00%
TOTAL	*1.440E+06	99.99%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 100 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	3.214E-04	0.00%
HE 3	2.661E-02	0.00%
HE 4	9.359E+00	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.182E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.849E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	3.801E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.289E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	3.860E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.288E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	7.556E-05	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.418E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.850E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.594E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%

TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 54	3.701E-37	0.00%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	3.432E-12	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.411E+01	0.01%
CO 60	1.522E-05	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.459E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	3.315E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.688E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.574E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	7.153E-03	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.428E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	4.084E-02	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 90	5.552E+01	0.00%
Y 89	5.190E+02	0.04%
Y 90	1.392E-02	0.00%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.190E+02	0.05%
NB 93M	7.855E-03	0.00%

NB 94	5.957E+00	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.830E-02	0.00%
MO 94	3.663E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.593E+02	0.06%
RU 99	2.848E-01	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RU106	2.084E-28	0.00%
RH102	3.684E-14	0.00%
RH103	4.825E+02	0.03%
RH106	1.958E-34	0.00%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.648E-02	0.00%
AG108	8.721E-13	0.00%
AG108M	2.762E-04	0.00%
AG109	7.852E+01	0.01%
AG109M	9.854E-34	0.00%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD109	9.980E-28	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD113M	2.428E-03	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.864E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN121M	3.663E-03	0.00%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.987E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB125	2.134E-10	0.00%
SB126	1.419E-06	0.00%
SB126M	1.079E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE125M	2.985E-12	0.00%
TE126	9.010E-01	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%

I129	1.971E+02	0.01%
XE128	3.731E+00	0.00%
XE129	2.232E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	3.549E-13	0.00%
CS135	4.399E+02	0.03%
CS137	1.310E+02	0.01%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	4.617E-01	0.00%
BA136	2.485E+01	0.00%
BA137	1.246E+03	0.09%
BA137M	2.004E-05	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
CE144	6.874E-37	0.00%
PR141	1.251E+03	0.09%
PR144	2.902E-41	0.00%
PR144M	1.451E-43	0.00%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	1.986E-08	0.00%
PM147	4.758E-10	0.00%
SM146	8.760E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	7.983E+00	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	4.741E-08	0.00%
EU151	9.278E+00	0.00%
EU152	3.335E-04	0.00%
EU153	1.335E+02	0.01%
EU154	1.249E-02	0.00%
EU155	1.298E-05	0.00%
GD152	7.811E-02	0.00%
GD154	4.283E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.366E-03	0.00%
ER166	4.364E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%

TM171	1.098E-22	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.147E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	7.777E-10	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	3.577E-13	0.00%
TL206	7.867E-17	0.00%
TL207	2.724E-13	0.00%
TL208	1.966E-11	0.00%
TL209	6.806E-17	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.273E-01	0.00%
PB209	2.835E-13	0.00%
PB210	2.195E-07	0.00%
PB211	2.107E-12	0.00%
PB212	1.160E-08	0.00%
PB214	9.312E-13	0.00%
BI208	4.693E-06	0.00%
BI209	3.999E-01	0.00%
BI210	1.351E-10	0.00%
BI210M	3.032E-05	0.00%
BI211	1.243E-13	0.00%
BI212	1.100E-09	0.00%
BI213	6.662E-14	0.00%
BI214	6.915E-13	0.00%
PO210	3.730E-09	0.00%
PO211	1.525E-18	0.00%
PO212	5.821E-20	0.00%
PO213	1.000E-22	0.00%
PO214	9.511E-20	0.00%
PO215	1.765E-18	0.00%
PO216	4.628E-14	0.00%
PO218	1.080E-13	0.00%
AT217	8.004E-19	0.00%
RN219	3.998E-15	0.00%
RN220	1.747E-11	0.00%
RN222	1.985E-10	0.00%
FR221	7.269E-15	0.00%
FR223	1.855E-14	0.00%
RA223	1.016E-09	0.00%
RA224	1.012E-07	0.00%
RA225	3.286E-11	0.00%
RA226	3.089E-05	0.00%
RA228	5.836E-12	0.00%
AC225	2.221E-11	0.00%
AC227	7.189E-07	0.00%

AC228	6.091E-16	0.00%
TH227	1.669E-09	0.00%
TH228	1.966E-05	0.00%
TH229	6.057E-06	0.00%
TH230	7.421E-02	0.00%
TH231	3.815E-08	0.00%
TH232	1.375E-02	0.00%
TH234	1.358E-05	0.00%
PA231	1.394E-03	0.00%
PA233	2.595E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	7.329E-04	0.00%
U233	2.304E-02	0.00%
U234	3.098E+02	0.02%
U235	9.381E+03	0.65%
U236	4.638E+03	0.32%
U237	3.382E-07	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP235	8.817E-34	0.00%
NP236	5.009E-04	0.00%
NP237	7.640E+02	0.05%
NP238	2.612E-07	0.00%
NP239	8.708E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	1.118E-09	0.00%
PU238	9.419E+01	0.01%
PU239	5.976E+03	0.42%
PU240	2.326E+03	0.16%
PU241	1.092E+01	0.00%
PU242	4.713E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	1.217E+03	0.08%
AM242	1.666E-05	0.00%
AM242M	1.393E+00	0.00%
AM243	1.013E+02	0.01%
CM242	3.370E-03	0.00%
CM243	4.172E-02	0.00%
CM244	7.210E-01	0.00%
CM245	1.325E+00	0.00%
CM246	1.425E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
BK249	3.620E-41	0.00%
CF249	7.731E-07	0.00%
CF250	8.487E-10	0.00%
CF251	6.644E-08	0.00%
CF252	1.425E-19	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 200 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	1.173E-06	0.00%
HE 3	2.671E-02	0.00%
HE 4	1.400E+01	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.182E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.814E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	3.416E-09	0.00%
P 31	1.845E+02	0.01%
P 32	2.058E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	3.861E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.287E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	1.498E-04	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.095E-06	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.988E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.592E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%

TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	9.068E-24	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.414E+01	0.01%
CO 60	2.951E-11	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.456E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	1.561E+00	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.864E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.567E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	1.416E-02	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.427E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	6.353E-05	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.481E-03	0.00%
SR 88	3.979E+02	0.03%
SR 90	5.138E+00	0.00%
Y 89	5.190E+02	0.04%
Y 90	1.288E-03	0.00%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.191E+02	0.05%
NB 93M	7.898E-03	0.00%
NB 94	5.937E+00	0.00%

MO 92	5.705E+01	0.00%
MO 93	1.794E-02	0.00%
MO 94	3.665E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.590E+02	0.06%
RU 99	5.644E-01	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH102	1.535E-24	0.00%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.900E-02	0.00%
AG108	5.052E-13	0.00%
AG108M	1.601E-04	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD113M	2.099E-05	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN121M	9.149E-04	0.00%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.985E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB125	2.892E-21	0.00%
SB126	1.418E-06	0.00%
SB126M	1.078E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE125M	4.044E-23	0.00%
TE126	9.220E-01	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE128	3.731E+00	0.00%
XE129	2.323E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%

XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	8.931E-28	0.00%
CS135	4.398E+02	0.03%
CS137	1.300E+01	0.00%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	4.759E-01	0.00%
BA136	2.485E+01	0.00%
BA137	1.365E+03	0.09%
BA137M	1.988E-06	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	6.680E-14	0.00%
PM147	1.595E-21	0.00%
SM146	8.760E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	3.696E+00	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	6.912E-09	0.00%
EU151	1.357E+01	0.00%
EU152	2.040E-06	0.00%
EU153	1.335E+02	0.01%
EU154	3.947E-06	0.00%
EU155	1.105E-11	0.00%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.289E-03	0.00%
ER166	4.372E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM171	2.301E-38	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%

HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.147E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	1.546E-09	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	2.682E-13	0.00%
TL206	7.867E-17	0.00%
TL207	4.987E-13	0.00%
TL208	7.509E-12	0.00%
TL209	2.416E-16	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.277E-01	0.00%
PB209	1.006E-12	0.00%
PB210	1.245E-06	0.00%
PB211	3.858E-12	0.00%
PB212	4.429E-09	0.00%
PB214	4.039E-12	0.00%
BI208	4.692E-06	0.00%
BI209	3.999E-01	0.00%
BI210	7.659E-10	0.00%
BI210M	3.032E-05	0.00%
BI211	2.277E-13	0.00%
BI212	4.202E-10	0.00%
BI213	2.366E-13	0.00%
BI214	3.000E-12	0.00%
PO210	2.116E-08	0.00%
PO211	2.793E-18	0.00%
PO212	2.223E-20	0.00%
PO213	3.548E-22	0.00%
PO214	4.127E-19	0.00%
PO215	3.231E-18	0.00%
PO216	1.768E-14	0.00%
PO218	4.684E-13	0.00%
AT217	2.842E-18	0.00%
RN219	7.321E-15	0.00%
RN220	6.672E-12	0.00%
RN222	8.612E-10	0.00%
FR221	2.580E-14	0.00%
FR223	3.398E-14	0.00%
RA223	1.860E-09	0.00%
RA224	3.863E-08	0.00%
RA225	1.167E-10	0.00%
RA226	1.340E-04	0.00%
RA228	1.279E-11	0.00%
AC225	7.881E-11	0.00%
AC227	1.317E-06	0.00%
AC228	1.334E-15	0.00%
TH227	3.056E-09	0.00%
TH228	7.508E-06	0.00%
TH229	2.151E-05	0.00%
TH230	1.687E-01	0.00%
TH231	3.821E-08	0.00%
TH232	2.729E-02	0.00%
TH234	1.358E-05	0.00%

PA231	2.301E-03	0.00%
PA233	3.203E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	2.799E-04	0.00%
U233	5.028E-02	0.00%
U234	3.617E+02	0.03%
U235	9.400E+03	0.65%
U236	4.661E+03	0.32%
U237	2.822E-09	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP236	5.007E-04	0.00%
NP237	9.432E+02	0.07%
NP238	1.656E-07	0.00%
NP239	8.626E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	1.118E-09	0.00%
PU238	4.302E+01	0.00%
PU239	5.960E+03	0.41%
PU240	2.302E+03	0.16%
PU241	9.112E-02	0.00%
PU242	4.713E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	1.046E+03	0.07%
AM242	1.056E-05	0.00%
AM242M	8.829E-01	0.00%
AM243	1.004E+02	0.01%
CM242	2.136E-03	0.00%
CM243	3.666E-03	0.00%
CM244	1.570E-02	0.00%
CM245	1.314E+00	0.00%
CM246	1.404E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.261E-05	0.00%
CF249	6.344E-07	0.00%
CF250	4.241E-12	0.00%
CF251	6.149E-08	0.00%
CF252	5.529E-31	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 300 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	4.282E-09	0.00%
HE 3	2.671E-02	0.00%
HE 4	1.769E+01	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.182E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.781E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	3.071E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.850E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	3.863E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.286E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	2.241E-04	0.00%
AR 38	1.287E-03	0.00%
AR 39	8.464E-07	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	2.126E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.591E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%

TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 55	2.395E-35	0.00%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.417E+01	0.01%
CO 60	5.722E-17	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.453E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	7.347E-01	0.00%
NI 64	1.074E+02	0.01%
CU 63	1.947E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.560E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	2.116E-02	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.426E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	9.884E-08	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.482E-03	0.00%
SR 88	3.979E+02	0.03%
SR 90	4.754E-01	0.00%
Y 89	5.190E+02	0.04%
Y 90	1.192E-04	0.00%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.191E+02	0.05%
NB 93M	7.898E-03	0.00%
NB 94	5.916E+00	0.00%

MO 92	5.705E+01	0.00%
MO 93	1.759E-02	0.00%
MO 94	3.667E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.588E+02	0.06%
RU 99	8.439E-01	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH102	6.391E-35	0.00%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	5.152E-02	0.00%
AG108	2.928E-13	0.00%
AG108M	9.272E-05	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD113M	1.813E-07	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN121M	2.286E-04	0.00%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.983E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB125	3.918E-32	0.00%
SB126	1.417E-06	0.00%
SB126M	1.077E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE125M	5.480E-34	0.00%
TE126	9.427E-01	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE128	3.731E+00	0.00%
XE129	2.414E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%

XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS134	2.247E-42	0.00%
CS135	4.398E+02	0.03%
CS137	1.289E+00	0.00%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	4.899E-01	0.00%
BA136	2.485E+01	0.00%
BA137	1.376E+03	0.10%
BA137M	1.972E-07	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	2.247E-19	0.00%
PM147	5.349E-33	0.00%
SM146	8.760E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	1.711E+00	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	1.008E-09	0.00%
EU151	1.555E+01	0.00%
EU152	1.248E-08	0.00%
EU153	1.335E+02	0.01%
EU154	1.247E-09	0.00%
EU155	9.398E-18	0.00%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.217E-03	0.00%
ER166	4.379E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
TM171	4.822E-54	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%

HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.147E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	2.313E-09	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	2.012E-13	0.00%
TL206	7.867E-17	0.00%
TL207	7.229E-13	0.00%
TL208	2.868E-12	0.00%
TL209	5.575E-16	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.279E-01	0.00%
PB209	2.323E-12	0.00%
PB210	3.299E-06	0.00%
PB211	5.592E-12	0.00%
PB212	1.692E-09	0.00%
PB214	9.629E-12	0.00%
BI208	4.691E-06	0.00%
BI209	3.999E-01	0.00%
BI210	2.030E-09	0.00%
BI210M	3.032E-05	0.00%
BI211	3.299E-13	0.00%
BI212	1.605E-10	0.00%
BI213	5.457E-13	0.00%
BI214	7.151E-12	0.00%
PO210	5.607E-08	0.00%
PO211	4.048E-18	0.00%
PO212	8.489E-21	0.00%
PO213	8.188E-22	0.00%
PO214	9.840E-19	0.00%
PO215	4.683E-18	0.00%
PO216	6.750E-15	0.00%
PO218	1.116E-12	0.00%
AT217	6.556E-18	0.00%
RN219	1.061E-14	0.00%
RN220	2.548E-12	0.00%
RN222	2.053E-09	0.00%
FR221	5.954E-14	0.00%
FR223	4.925E-14	0.00%
RA223	2.696E-09	0.00%
RA224	1.475E-08	0.00%
RA225	2.692E-10	0.00%
RA226	3.194E-04	0.00%
RA228	1.916E-11	0.00%
AC225	1.818E-10	0.00%
AC227	1.908E-06	0.00%
AC228	2.000E-15	0.00%
TH227	4.430E-09	0.00%
TH228	2.868E-06	0.00%
TH229	4.961E-05	0.00%
TH230	2.730E-01	0.00%
TH231	3.829E-08	0.00%
TH232	4.089E-02	0.00%
TH234	1.358E-05	0.00%

PA231	3.206E-03	0.00%
PA233	3.722E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.068E-04	0.00%
U233	8.279E-02	0.00%
U234	3.854E+02	0.03%
U235	9.414E+03	0.65%
U236	4.686E+03	0.33%
U237	9.252E-11	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP236	5.003E-04	0.00%
NP237	1.096E+03	0.08%
NP238	1.050E-07	0.00%
NP239	8.546E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	1.117E-09	0.00%
PU238	1.970E+01	0.00%
PU239	5.943E+03	0.41%
PU240	2.278E+03	0.16%
PU241	2.991E-03	0.00%
PU242	4.712E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	8.911E+02	0.06%
AM242	6.695E-06	0.00%
AM242M	5.597E-01	0.00%
AM243	9.941E+01	0.01%
CM242	1.354E-03	0.00%
CM243	3.221E-04	0.00%
CM244	3.416E-04	0.00%
CM245	1.304E+00	0.00%
CM246	1.383E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.255E-05	0.00%
CF249	5.206E-07	0.00%
CF250	2.123E-14	0.00%
CF251	5.692E-08	0.00%
CF252	2.145E-42	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 500 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	5.704E-14	0.00%
HE 3	2.671E-02	0.00%
HE 4	2.344E+01	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.182E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.714E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.481E-09	0.00%
P 31	1.845E+02	0.01%
P 32	1.495E-13	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	3.866E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.285E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	3.725E-04	0.00%
AR 38	1.287E-03	0.00%
AR 39	5.056E-07	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	2.401E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.588E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%

TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.423E+01	0.01%
CO 60	2.151E-28	0.00%
NI 58	7.263E+03	0.50%
NI 59	3.447E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	1.628E-01	0.00%
NI 64	1.074E+02	0.01%
CU 63	2.004E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.546E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	3.515E-02	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.425E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	2.392E-13	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.483E-03	0.00%
SR 88	3.979E+02	0.03%
SR 90	4.071E-03	0.00%
Y 89	5.190E+02	0.04%
Y 90	1.020E-06	0.00%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.351E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.191E+02	0.05%
NB 93M	7.898E-03	0.00%
NB 94	5.876E+00	0.00%
MO 92	5.705E+01	0.00%

MO 93	1.691E-02	0.00%
MO 94	3.671E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.896E-03	0.00%
TC 99	8.582E+02	0.06%
RU 99	1.402E+00	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH102	1.109E-55	0.00%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	5.653E-02	0.00%
AG108	9.833E-14	0.00%
AG108M	3.113E-05	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD113M	1.355E-11	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN121M	1.426E-05	0.00%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.978E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	1.415E-06	0.00%
SB126M	1.076E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	9.844E-01	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE128	3.731E+00	0.00%
XE129	2.595E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%

CS133	1.239E+03	0.09%
CS135	4.398E+02	0.03%
CS137	1.269E-02	0.00%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	5.178E-01	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA137M	1.942E-09	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
PM146	2.541E-30	0.00%
SM146	8.760E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	3.666E-01	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	2.143E-11	0.00%
EU151	1.689E+01	0.00%
EU152	4.673E-13	0.00%
EU153	1.335E+02	0.01%
EU154	1.246E-16	0.00%
EU155	6.805E-30	0.00%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.084E-03	0.00%
ER166	4.392E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.147E-11	0.00%
W180	8.108E-03	0.00%

W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	3.849E-09	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	1.132E-13	0.00%
TL206	7.867E-17	0.00%
TL207	1.171E-12	0.00%
TL208	4.187E-13	0.00%
TL209	1.701E-15	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.273E-01	0.00%
PB207	2.328E-01	0.00%
PB208	5.280E-01	0.00%
PB209	7.085E-12	0.00%
PB210	1.068E-05	0.00%
PB211	9.056E-12	0.00%
PB212	2.469E-10	0.00%
PB214	2.844E-11	0.00%
BI208	4.689E-06	0.00%
BI209	3.999E-01	0.00%
BI210	6.570E-09	0.00%
BI210M	3.031E-05	0.00%
BI211	5.343E-13	0.00%
BI212	2.343E-11	0.00%
BI213	1.665E-12	0.00%
BI214	2.112E-11	0.00%
PO210	1.814E-07	0.00%
PO211	6.555E-18	0.00%
PO212	1.239E-21	0.00%
PO213	2.498E-21	0.00%
PO214	2.906E-18	0.00%
PO215	7.582E-18	0.00%
PO216	9.854E-16	0.00%
PO218	3.298E-12	0.00%
AT217	2.000E-17	0.00%
RN219	1.718E-14	0.00%
RN220	3.721E-13	0.00%
RN222	6.064E-09	0.00%
FR221	1.816E-13	0.00%
FR223	7.977E-14	0.00%
RA223	4.365E-09	0.00%
RA224	2.154E-09	0.00%
RA225	8.212E-10	0.00%
RA226	9.435E-04	0.00%
RA228	3.201E-11	0.00%
AC225	5.548E-10	0.00%
AC227	3.090E-06	0.00%
AC228	3.341E-15	0.00%
TH227	7.172E-09	0.00%
TH228	4.187E-07	0.00%
TH229	1.513E-04	0.00%
TH230	4.927E-01	0.00%
TH231	3.842E-08	0.00%
TH232	6.830E-02	0.00%
TH234	1.358E-05	0.00%
PA231	5.017E-03	0.00%
PA233	4.540E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.561E-05	0.00%
U233	1.606E-01	0.00%

U234	4.010E+02	0.03%
U235	9.450E+03	0.66%
U236	4.732E+03	0.33%
U237	6.619E-11	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP236	4.998E-04	0.00%
NP237	1.336E+03	0.09%
NP238	4.216E-08	0.00%
NP239	8.384E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	1.115E-09	0.00%
PU238	4.181E+00	0.00%
PU239	5.911E+03	0.41%
PU240	2.230E+03	0.15%
PU241	2.141E-03	0.00%
PU242	4.711E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	6.467E+02	0.04%
AM242	2.689E-06	0.00%
AM242M	2.249E-01	0.00%
AM243	9.756E+01	0.01%
CM242	5.438E-04	0.00%
CM243	2.485E-06	0.00%
CM244	1.618E-07	0.00%
CM245	1.282E+00	0.00%
CM246	1.343E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.254E-05	0.00%
CF249	3.505E-07	0.00%
CF250	3.739E-17	0.00%
CF251	4.878E-08	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 1000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
H 3	3.696E-26	0.00%
HE 3	2.671E-02	0.00%
HE 4	3.289E+01	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.182E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.554E-01	0.00%
N 14	1.061E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	1.455E-09	0.00%
P 31	1.845E+02	0.01%
P 32	8.769E-14	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	3.872E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.281E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	7.434E-04	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.394E-07	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	3.083E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.582E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%

TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.437E+01	0.01%
NI 58	7.263E+03	0.50%
NI 59	3.432E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	3.764E-03	0.00%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.511E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	6.998E-02	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.421E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 85	2.179E-27	0.00%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.485E-03	0.00%
SR 88	3.979E+02	0.03%
SR 90	2.761E-08	0.00%
Y 89	5.190E+02	0.04%
Y 90	6.925E-12	0.00%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.350E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.194E+02	0.05%
NB 93M	7.896E-03	0.00%
NB 94	5.777E+00	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.532E-02	0.00%

MO 94	3.681E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.895E-03	0.00%
TC 99	8.568E+02	0.06%
RU 99	2.798E+00	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	6.906E-02	0.00%
AG108	6.418E-15	0.00%
AG108M	2.032E-06	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD113M	6.529E-22	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN121M	1.387E-08	0.00%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.968E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	1.410E-06	0.00%
SB126M	1.072E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	1.087E+00	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE128	3.731E+00	0.00%
XE129	3.043E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	4.397E+02	0.03%

CS137	1.220E-07	0.00%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	5.868E-01	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA137M	1.866E-14	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.760E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	7.792E-03	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	1.413E-15	0.00%
EU151	1.725E+01	0.00%
EU152	4.006E-24	0.00%
EU153	1.335E+02	0.01%
EU154	3.927E-34	0.00%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	8.124E-04	0.00%
ER166	4.420E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.471E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.147E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%

RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	7.689E-09	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	2.687E-14	0.00%
TL206	7.866E-17	0.00%
TL207	2.360E-12	0.00%
TL208	4.128E-15	0.00%
TL209	8.200E-15	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.277E-01	0.00%
PB207	2.329E-01	0.00%
PB208	5.280E-01	0.00%
PB209	3.417E-11	0.00%
PB210	5.011E-05	0.00%
PB211	1.826E-11	0.00%
PB212	2.435E-12	0.00%
PB214	1.167E-10	0.00%
BI208	4.684E-06	0.00%
BI209	3.999E-01	0.00%
BI210	3.083E-08	0.00%
BI210M	3.031E-05	0.00%
BI211	1.077E-12	0.00%
BI212	2.310E-13	0.00%
BI213	8.029E-12	0.00%
BI214	8.666E-11	0.00%
PO210	8.517E-07	0.00%
PO211	1.321E-17	0.00%
PO212	1.222E-23	0.00%
PO213	1.204E-20	0.00%
PO214	1.192E-17	0.00%
PO215	1.528E-17	0.00%
PO216	9.716E-18	0.00%
PO218	1.353E-11	0.00%
AT217	9.647E-17	0.00%
RN219	3.463E-14	0.00%
RN220	3.668E-15	0.00%
RN222	2.488E-08	0.00%
FR221	8.759E-13	0.00%
FR223	1.607E-13	0.00%
RA223	8.799E-09	0.00%
RA224	2.124E-11	0.00%
RA225	3.960E-09	0.00%
RA226	3.871E-03	0.00%
RA228	6.467E-11	0.00%
AC225	2.675E-09	0.00%
AC227	6.229E-06	0.00%
AC228	6.751E-15	0.00%
TH227	1.445E-08	0.00%
TH228	4.128E-09	0.00%
TH229	7.298E-04	0.00%
TH230	1.053E+00	0.00%
TH231	3.877E-08	0.00%
TH232	1.380E-01	0.00%
TH234	1.358E-05	0.00%
PA231	9.535E-03	0.00%
PA233	5.731E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	1.539E-07	0.00%
U233	4.044E-01	0.00%
U234	4.047E+02	0.03%
U235	9.534E+03	0.66%
U236	4.846E+03	0.34%
U237	6.354E-11	0.00%

U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP236	4.983E-04	0.00%
NP237	1.688E+03	0.12%
NP238	4.312E-09	0.00%
NP239	8.001E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	1.112E-09	0.00%
PU238	1.013E-01	0.00%
PU239	5.831E+03	0.40%
PU240	2.115E+03	0.15%
PU241	2.055E-03	0.00%
PU242	4.707E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	2.900E+02	0.02%
AM242	2.751E-07	0.00%
AM242M	2.300E-02	0.00%
AM243	9.312E+01	0.01%
CM242	5.563E-05	0.00%
CM243	1.301E-11	0.00%
CM244	6.164E-13	0.00%
CM245	1.231E+00	0.00%
CM246	1.249E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.246E-05	0.00%
CF249	1.304E-07	0.00%
CF250	3.614E-17	0.00%
CF251	3.316E-08	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 2000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
HE 3	2.671E-02	0.00%
HE 4	4.326E+01	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.181E-04	0.00%
B 10	6.284E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.263E-01	0.00%
N 14	1.062E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	5.011E-10	0.00%
P 31	1.845E+02	0.01%
P 32	3.019E-14	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	3.887E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.274E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	1.483E-03	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.060E-08	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	4.436E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.568E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%

V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.467E+01	0.01%
NI 58	7.263E+03	0.50%
NI 59	3.403E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	2.012E-06	0.00%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.442E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	1.391E-01	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.412E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.489E-03	0.00%
SR 88	3.979E+02	0.03%
SR 90	1.270E-18	0.00%
Y 89	5.190E+02	0.04%
Y 90	3.186E-22	0.00%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.342E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.198E+02	0.05%
NB 93M	7.893E-03	0.00%
NB 94	5.582E+00	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.256E-02	0.00%
MO 94	3.701E+01	0.00%
MO 95	9.258E+02	0.06%

MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.894E-03	0.00%
TC 99	8.540E+02	0.06%
RU 99	5.581E+00	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.324E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	9.400E-02	0.00%
AG108	2.737E-17	0.00%
AG108M	8.667E-09	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD113M	1.517E-42	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN121M	1.313E-14	0.00%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.947E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	1.400E-06	0.00%
SB126M	1.065E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	1.292E+00	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE128	3.731E+00	0.00%
XE129	3.928E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	4.396E+02	0.03%
CS137	1.126E-17	0.00%
BA132	1.741E-03	0.00%

BA134	1.989E+02	0.01%
BA135	7.232E-01	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA137M	1.723E-24	0.00%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.760E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	3.521E-06	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU150	6.138E-24	0.00%
EU151	1.726E+01	0.00%
EU153	1.335E+02	0.01%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	4.559E-04	0.00%
ER166	4.455E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.470E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.146E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	1.537E-08	0.00%

OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	1.514E-15	0.00%
TL206	7.864E-17	0.00%
TL207	4.589E-12	0.00%
TL208	7.561E-16	0.00%
TL209	3.942E-14	0.00%
PB204	1.375E-02	0.00%
PB205	3.077E-05	0.00%
PB206	2.311E-01	0.00%
PB207	2.331E-01	0.00%
PB208	5.280E-01	0.00%
PB209	1.642E-10	0.00%
PB210	1.858E-04	0.00%
PB211	3.550E-11	0.00%
PB212	4.460E-13	0.00%
PB214	4.326E-10	0.00%
BI208	4.676E-06	0.00%
BI209	4.001E-01	0.00%
BI210	1.143E-07	0.00%
BI210M	3.031E-05	0.00%
BI211	2.095E-12	0.00%
BI212	4.231E-14	0.00%
BI213	3.858E-11	0.00%
BI214	3.212E-10	0.00%
PO210	3.157E-06	0.00%
PO211	2.570E-17	0.00%
PO212	2.238E-24	0.00%
PO213	5.790E-20	0.00%
PO214	4.420E-17	0.00%
PO215	2.973E-17	0.00%
PO216	1.780E-18	0.00%
PO218	5.017E-11	0.00%
AT217	4.636E-16	0.00%
RN219	6.737E-14	0.00%
RN220	6.719E-16	0.00%
RN222	9.223E-08	0.00%
FR221	4.210E-12	0.00%
FR223	3.127E-13	0.00%
RA223	1.711E-08	0.00%
RA224	3.890E-12	0.00%
RA225	1.904E-08	0.00%
RA226	1.435E-02	0.00%
RA228	1.322E-10	0.00%
AC225	1.286E-08	0.00%
AC227	1.212E-05	0.00%
AC228	1.381E-14	0.00%
TH227	2.812E-08	0.00%
TH228	7.560E-10	0.00%
TH229	3.508E-03	0.00%
TH230	2.164E+00	0.00%
TH231	3.945E-08	0.00%
TH232	2.822E-01	0.00%
TH234	1.358E-05	0.00%
PA231	1.855E-02	0.00%
PA233	6.504E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	2.745E-08	0.00%
U233	9.848E-01	0.00%
U234	4.039E+02	0.03%
U235	9.700E+03	0.67%
U236	5.056E+03	0.35%
U237	5.857E-11	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP236	4.953E-04	0.00%
NP237	1.915E+03	0.13%

NP238	4.512E-11	0.00%
NP239	7.283E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	1.106E-09	0.00%
PU238	1.507E-04	0.00%
PU239	5.674E+03	0.39%
PU240	1.902E+03	0.13%
PU241	1.894E-03	0.00%
PU242	4.699E+02	0.03%
PU243	5.216E-14	0.00%
PU244	2.808E-02	0.00%
AM241	5.840E+01	0.00%
AM242	2.879E-09	0.00%
AM242M	2.407E-04	0.00%
AM243	8.474E+01	0.01%
CM242	5.820E-07	0.00%
CM243	3.564E-22	0.00%
CM244	6.156E-13	0.00%
CM245	1.135E+00	0.00%
CM246	1.078E-01	0.00%
CM247	1.463E-03	0.00%
CM248	8.232E-05	0.00%
CF249	1.804E-08	0.00%
CF250	3.472E-17	0.00%
CF251	1.533E-08	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 5000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
HE 3	2.671E-02	0.00%
HE 4	6.126E+01	0.00%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.178E-04	0.00%
B 10	6.286E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	1.574E-01	0.00%
N 14	1.062E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.045E-11	0.00%
P 31	1.845E+02	0.01%
P 32	1.232E-15	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	3.930E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.251E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	3.695E-03	0.00%
AR 38	1.287E-03	0.00%
AR 39	4.656E-12	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	8.416E-05	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.529E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%

V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.555E+01	0.01%
NI 58	7.263E+03	0.50%
NI 59	3.315E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	3.072E-16	0.00%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	6.240E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	3.420E-01	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.389E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.501E-03	0.00%
SR 88	3.979E+02	0.03%
Y 89	5.190E+02	0.04%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.333E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.211E+02	0.05%
NB 93M	7.882E-03	0.00%
NB 94	5.039E+00	0.00%
MO 92	5.705E+01	0.00%
MO 93	6.932E-03	0.00%
MO 94	3.756E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%

MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.892E-03	0.00%
TC 99	8.457E+02	0.06%
RU 99	1.388E+01	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.323E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	1.685E-01	0.00%
AG108	2.121E-24	0.00%
AG108M	6.718E-16	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN121M	1.113E-32	0.00%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.887E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	1.371E-06	0.00%
SB126M	1.042E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	1.899E+00	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.971E+02	0.01%
XE128	3.731E+00	0.00%
XE129	6.560E-02	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	4.392E+02	0.03%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	1.126E+00	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%

BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.760E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	3.249E-16	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU151	1.726E+01	0.00%
EU153	1.335E+02	0.01%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	8.061E-05	0.00%
ER166	4.493E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.470E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.145E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	3.840E-08	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	2.709E-19	0.00%
TL206	7.858E-17	0.00%
TL207	1.122E-11	0.00%

TL208	8.074E-16	0.00%
TL209	2.758E-13	0.00%
PB204	1.375E-02	0.00%
PB205	3.076E-05	0.00%
PB206	2.770E-01	0.00%
PB207	2.350E-01	0.00%
PB208	5.280E-01	0.00%
PB209	1.149E-09	0.00%
PB210	8.480E-04	0.00%
PB211	8.685E-11	0.00%
PB212	4.763E-13	0.00%
PB214	1.975E-09	0.00%
BI208	4.649E-06	0.00%
BI209	4.034E-01	0.00%
BI210	5.218E-07	0.00%
BI210M	3.029E-05	0.00%
BI211	5.125E-12	0.00%
BI212	4.517E-14	0.00%
BI213	2.699E-10	0.00%
BI214	1.466E-09	0.00%
PO210	1.441E-05	0.00%
PO211	6.288E-17	0.00%
PO212	2.390E-24	0.00%
PO213	4.050E-19	0.00%
PO214	2.018E-16	0.00%
PO215	7.274E-17	0.00%
PO216	1.900E-18	0.00%
PO218	2.290E-10	0.00%
AT217	3.243E-15	0.00%
RN219	1.648E-13	0.00%
RN220	7.174E-16	0.00%
RN222	4.211E-07	0.00%
FR221	2.945E-11	0.00%
FR223	7.651E-13	0.00%
RA223	4.187E-08	0.00%
RA224	4.154E-12	0.00%
RA225	1.331E-07	0.00%
RA226	6.550E-02	0.00%
RA228	3.501E-10	0.00%
AC225	8.994E-08	0.00%
AC227	2.964E-05	0.00%
AC228	3.654E-14	0.00%
TH227	6.880E-08	0.00%
TH228	8.073E-10	0.00%
TH229	2.455E-02	0.00%
TH230	5.425E+00	0.00%
TH231	4.136E-08	0.00%
TH232	7.471E-01	0.00%
TH234	1.358E-05	0.00%
PA231	4.539E-02	0.00%
PA233	6.692E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	2.695E-08	0.00%
U233	2.831E+00	0.00%
U234	4.008E+02	0.03%
U235	1.017E+04	0.71%
U236	5.567E+03	0.39%
U237	4.585E-11	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP236	4.864E-04	0.00%
NP237	1.970E+03	0.14%
NP238	5.167E-17	0.00%
NP239	5.495E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	1.086E-09	0.00%
PU238	3.072E-10	0.00%
PU239	5.225E+03	0.36%

PU240	1.384E+03	0.10%
PU241	1.483E-03	0.00%
PU242	4.675E+02	0.03%
PU243	5.215E-14	0.00%
PU244	2.808E-02	0.00%
AM241	5.274E-01	0.00%
AM242	3.297E-15	0.00%
AM242M	2.756E-10	0.00%
AM243	6.394E+01	0.00%
CM242	6.685E-13	0.00%
CM244	6.156E-13	0.00%
CM245	8.885E-01	0.00%
CM246	6.948E-02	0.00%
CM247	1.463E-03	0.00%
CM248	8.176E-05	0.00%
CF249	4.781E-11	0.00%
CF250	3.081E-17	0.00%
CF251	1.513E-09	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 10000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
HE 3	2.671E-02	0.00%
HE 4	8.323E+01	0.01%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.173E-04	0.00%
B 10	6.287E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	8.600E-02	0.00%
N 14	1.063E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	9.883E-14	0.00%
P 31	1.845E+02	0.01%
P 32	5.954E-18	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	4.001E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.214E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	7.345E-03	0.00%
AR 38	1.287E-03	0.00%
AR 39	1.182E-17	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.482E-04	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.464E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%

V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.697E+01	0.01%
NI 58	7.263E+03	0.50%
NI 59	3.175E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 63	1.340E-32	0.00%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	5.915E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	6.662E-01	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.350E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.522E-03	0.00%
SR 88	3.979E+02	0.03%
Y 89	5.190E+02	0.04%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.312E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.232E+02	0.05%
NB 93M	7.864E-03	0.00%
NB 94	4.249E+00	0.00%
MO 92	5.705E+01	0.00%
MO 93	2.574E-03	0.00%
MO 94	3.836E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%

MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.887E-03	0.00%
TC 99	8.320E+02	0.06%
RU 99	2.753E+01	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.321E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	2.926E-01	0.00%
AG108	2.989E-36	0.00%
AG108M	9.466E-28	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.789E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	1.325E-06	0.00%
SB126M	1.008E-08	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	2.882E+00	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.970E+02	0.01%
XE128	3.731E+00	0.00%
XE129	1.092E-01	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	4.385E+02	0.03%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	1.791E+00	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA138	1.431E+03	0.10%

LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.760E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM151	6.120E-33	0.00%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU151	1.726E+01	0.00%
EU153	1.335E+02	0.01%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	4.488E-06	0.00%
ER166	4.501E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.470E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.143E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	7.680E-08	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	1.539E-25	0.00%
TL206	7.849E-17	0.00%
TL207	2.207E-11	0.00%
TL208	9.039E-16	0.00%

TL209	1.033E-12	0.00%
PB204	1.375E-02	0.00%
PB205	3.076E-05	0.00%
PB206	5.089E-01	0.00%
PB207	2.414E-01	0.00%
PB208	5.280E-01	0.00%
PB209	4.307E-09	0.00%
PB210	2.183E-03	0.00%
PB211	1.708E-10	0.00%
PB212	5.331E-13	0.00%
PB214	5.085E-09	0.00%
BI208	4.605E-06	0.00%
BI209	4.276E-01	0.00%
BI210	1.343E-06	0.00%
BI210M	3.025E-05	0.00%
BI211	1.008E-11	0.00%
BI212	5.057E-14	0.00%
BI213	1.012E-09	0.00%
BI214	3.775E-09	0.00%
PO210	3.710E-05	0.00%
PO211	1.236E-16	0.00%
PO212	2.675E-24	0.00%
PO213	1.518E-18	0.00%
PO214	5.194E-16	0.00%
PO215	1.431E-16	0.00%
PO216	2.127E-18	0.00%
PO218	5.895E-10	0.00%
AT217	1.216E-14	0.00%
RN219	3.241E-13	0.00%
RN220	8.031E-16	0.00%
RN222	1.084E-06	0.00%
FR221	1.103E-10	0.00%
FR223	1.504E-12	0.00%
RA223	8.232E-08	0.00%
RA224	4.651E-12	0.00%
RA225	4.991E-07	0.00%
RA226	1.686E-01	0.00%
RA228	7.506E-10	0.00%
AC225	3.371E-07	0.00%
AC227	5.828E-05	0.00%
AC228	7.835E-14	0.00%
TH227	1.353E-07	0.00%
TH228	9.034E-10	0.00%
TH229	9.200E-02	0.00%
TH230	1.061E+01	0.00%
TH231	4.421E-08	0.00%
TH232	1.602E+00	0.00%
TH234	1.358E-05	0.00%
PA231	8.924E-02	0.00%
PA233	6.683E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	2.614E-08	0.00%
U233	5.872E+00	0.00%
U234	3.960E+02	0.03%
U235	1.087E+04	0.75%
U236	6.128E+03	0.43%
U237	3.050E-11	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP236	4.719E-04	0.00%
NP237	1.968E+03	0.14%
NP238	6.479E-27	0.00%
NP239	3.436E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	1.053E-09	0.00%
PU238	3.853E-20	0.00%
PU239	4.546E+03	0.32%
PU240	8.143E+02	0.06%

PU241	9.863E-04	0.00%
PU242	4.633E+02	0.03%
PU243	5.215E-14	0.00%
PU244	2.808E-02	0.00%
AM241	2.981E-02	0.00%
AM242	4.133E-25	0.00%
AM242M	3.455E-20	0.00%
AM243	3.998E+01	0.00%
CM242	8.384E-23	0.00%
CM244	6.156E-13	0.00%
CM245	5.908E-01	0.00%
CM246	3.340E-02	0.00%
CM247	1.462E-03	0.00%
CM248	8.096E-05	0.00%
CF249	2.426E-15	0.00%
CF250	2.524E-17	0.00%
CF251	3.190E-11	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 20000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
HE 3	2.671E-02	0.00%
HE 4	1.123E+02	0.01%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.164E-04	0.00%
B 10	6.290E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	2.565E-02	0.00%
N 14	1.064E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.310E-18	0.00%
P 31	1.845E+02	0.01%
P 32	1.392E-22	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	4.141E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.141E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	1.452E-02	0.00%
AR 38	1.287E-03	0.00%
AR 39	7.619E-29	0.00%
AR 40	3.724E-06	0.00%
K 40	5.458E-04	0.00%
K 41	2.683E-04	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.344E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%

V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	8.960E+01	0.01%
NI 58	7.263E+03	0.50%
NI 59	2.911E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	5.317E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	1.265E+00	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.273E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.564E-03	0.00%
SR 88	3.979E+02	0.03%
Y 89	5.190E+02	0.04%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.269E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.275E+02	0.05%
NB 93M	7.828E-03	0.00%
NB 94	3.019E+00	0.00%
MO 92	5.705E+01	0.00%
MO 93	3.549E-04	0.00%
MO 94	3.960E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%

MO100	1.079E+03	0.07%
TC 98	5.877E-03	0.00%
TC 99	8.054E+02	0.06%
RU 99	5.417E+01	0.00%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.319E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	5.402E-01	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.602E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	1.236E-06	0.00%
SB126M	9.397E-09	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	4.750E+00	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.969E+02	0.01%
XE128	3.731E+00	0.00%
XE129	1.962E-01	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	4.372E+02	0.03%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	3.113E+00	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%

CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.759E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU151	1.726E+01	0.00%
EU153	1.335E+02	0.01%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.392E-08	0.00%
ER166	4.501E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.469E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.139E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	1.536E-07	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
IR192	4.972E-38	0.00%
TL206	7.831E-17	0.00%
TL207	4.267E-11	0.00%
TL208	1.118E-15	0.00%
TL209	3.304E-12	0.00%
PB204	1.375E-02	0.00%
PB205	3.075E-05	0.00%
PB206	1.577E+00	0.00%

PB207	2.666E-01	0.00%
PB208	5.280E-01	0.00%
PB209	1.376E-08	0.00%
PB210	4.756E-03	0.00%
PB211	3.302E-10	0.00%
PB212	6.596E-13	0.00%
PB214	1.108E-08	0.00%
BI208	4.520E-06	0.00%
BI209	5.910E-01	0.00%
BI210	2.927E-06	0.00%
BI210M	3.019E-05	0.00%
BI211	1.947E-11	0.00%
BI212	6.256E-14	0.00%
BI213	3.234E-09	0.00%
BI214	8.226E-09	0.00%
PO210	8.083E-05	0.00%
PO211	2.390E-16	0.00%
PO212	3.310E-24	0.00%
PO213	4.852E-18	0.00%
PO214	1.132E-15	0.00%
PO215	2.764E-16	0.00%
PO216	2.632E-18	0.00%
PO218	1.285E-09	0.00%
AT217	3.886E-14	0.00%
RN219	6.265E-13	0.00%
RN220	9.935E-16	0.00%
RN222	2.362E-06	0.00%
FR221	3.528E-10	0.00%
FR223	2.907E-12	0.00%
RA223	1.592E-07	0.00%
RA224	5.753E-12	0.00%
RA225	1.595E-06	0.00%
RA226	3.674E-01	0.00%
RA228	1.628E-09	0.00%
AC225	1.077E-06	0.00%
AC227	1.127E-04	0.00%
AC228	1.700E-13	0.00%
TH227	2.614E-07	0.00%
TH228	1.118E-09	0.00%
TH229	2.940E-01	0.00%
TH230	2.012E+01	0.00%
TH231	4.883E-08	0.00%
TH232	3.474E+00	0.00%
TH234	1.358E-05	0.00%
PA231	1.725E-01	0.00%
PA233	6.663E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	2.461E-08	0.00%
U233	1.175E+01	0.00%
U234	3.863E+02	0.03%
U235	1.202E+04	0.83%
U236	6.651E+03	0.46%
U237	1.349E-11	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP236	4.443E-04	0.00%
NP237	1.962E+03	0.14%
NP238	1.018E-46	0.00%
NP239	1.343E-05	0.00%
NP240M	4.698E-15	0.00%
PU236	9.913E-10	0.00%
PU238	6.055E-40	0.00%
PU239	3.430E+03	0.24%
PU240	2.821E+02	0.02%
PU241	4.363E-04	0.00%
PU242	4.551E+02	0.03%
PU243	5.211E-14	0.00%
PU244	2.808E-02	0.00%

AM241	1.309E-02	0.00%
AM242	6.497E-45	0.00%
AM242M	5.431E-40	0.00%
AM243	1.563E+01	0.00%
CM242	1.318E-42	0.00%
CM244	6.156E-13	0.00%
CM245	2.613E-01	0.00%
CM246	7.715E-03	0.00%
CM247	1.462E-03	0.00%
CM248	7.931E-05	0.00%
CF249	6.245E-24	0.00%
CF250	1.695E-17	0.00%
CF251	1.418E-14	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 50000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
HE 3	2.671E-02	0.00%
HE 4	1.530E+02	0.01%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.137E-04	0.00%
B 10	6.300E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	6.805E-04	0.00%
N 14	1.064E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
SI 32	2.952E-32	0.00%
P 31	1.845E+02	0.01%
P 32	1.778E-36	0.00%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	4.540E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	2.931E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	3.509E-02	0.00%
AR 38	1.287E-03	0.00%
AR 40	3.726E-06	0.00%
K 40	5.458E-04	0.00%
K 41	5.727E-04	0.00%
CA 40	1.931E+00	0.00%
CA 41	1.039E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%

V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	9.628E+01	0.01%
NI 58	7.263E+03	0.50%
NI 59	2.245E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	3.860E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	2.721E+00	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	2.059E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.688E-03	0.00%
SR 88	3.979E+02	0.03%
Y 89	5.190E+02	0.04%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	9.144E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.401E+02	0.05%
NB 93M	7.723E-03	0.00%
NB 94	1.084E+00	0.00%
MO 92	5.705E+01	0.00%
MO 93	9.303E-07	0.00%
MO 94	4.155E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%

TC 98	5.848E-03	0.00%
TC 99	7.305E+02	0.05%
RU 99	1.291E+02	0.01%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.312E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	1.282E+00	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.114E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	1.004E-06	0.00%
SB126M	7.634E-09	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	9.638E+00	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.966E+02	0.01%
XE128	3.731E+00	0.00%
XE129	4.569E-01	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	4.333E+02	0.03%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	7.050E+00	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%

PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.756E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU151	1.726E+01	0.00%
EU153	1.335E+02	0.01%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	4.149E-16	0.00%
ER166	4.501E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.466E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.127E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	3.839E-07	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
TL206	7.777E-17	0.00%
TL207	9.309E-11	0.00%
TL208	1.815E-15	0.00%
TL209	1.140E-11	0.00%
PB204	1.375E-02	0.00%
PB205	3.073E-05	0.00%
PB206	9.129E+00	0.00%
PB207	4.267E-01	0.00%
PB208	5.280E-01	0.00%

PB209	4.751E-08	0.00%
PB210	1.135E-02	0.00%
PB211	7.201E-10	0.00%
PB212	1.070E-12	0.00%
PB214	2.642E-08	0.00%
BI208	4.271E-06	0.00%
BI209	2.284E+00	0.00%
BI210	6.981E-06	0.00%
BI210M	2.998E-05	0.00%
BI211	4.249E-11	0.00%
BI212	1.015E-13	0.00%
BI213	1.116E-08	0.00%
BI214	1.962E-08	0.00%
PO210	1.929E-04	0.00%
PO211	5.213E-16	0.00%
PO212	5.371E-24	0.00%
PO213	1.675E-17	0.00%
PO214	2.699E-15	0.00%
PO215	6.030E-16	0.00%
PO216	4.270E-18	0.00%
PO218	3.064E-09	0.00%
AT217	1.341E-13	0.00%
RN219	1.367E-12	0.00%
RN220	1.612E-15	0.00%
RN222	5.633E-06	0.00%
FR221	1.218E-09	0.00%
FR223	6.342E-12	0.00%
RA223	3.471E-07	0.00%
RA224	9.337E-12	0.00%
RA225	5.506E-06	0.00%
RA226	8.764E-01	0.00%
RA228	4.428E-09	0.00%
AC225	3.720E-06	0.00%
AC227	2.457E-04	0.00%
AC228	4.622E-13	0.00%
TH227	5.704E-07	0.00%
TH228	1.814E-09	0.00%
TH229	1.015E+00	0.00%
TH230	4.259E+01	0.00%
TH231	5.689E-08	0.00%
TH232	9.448E+00	0.00%
TH234	1.358E-05	0.00%
PA231	3.762E-01	0.00%
PA233	6.600E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.582E-10	0.00%
U232	2.055E-08	0.00%
U233	2.778E+01	0.00%
U234	3.590E+02	0.02%
U235	1.400E+04	0.97%
U236	6.912E+03	0.48%
U237	1.168E-12	0.00%
U238	9.361E+05	65.01%
U240	5.371E-13	0.00%
NP236	3.709E-04	0.00%
NP237	1.943E+03	0.13%
NP239	8.024E-07	0.00%
NP240M	4.697E-15	0.00%
PU236	8.274E-10	0.00%
PU239	1.454E+03	0.10%
PU240	1.172E+01	0.00%
PU241	3.777E-05	0.00%
PU242	4.313E+02	0.03%
PU243	5.206E-14	0.00%
PU244	2.808E-02	0.00%
AM241	1.134E-03	0.00%
AM243	9.339E-01	0.00%
CM244	6.156E-13	0.00%
CM245	2.263E-02	0.00%

CM246	9.517E-05	0.00%
CM247	1.460E-03	0.00%
CM248	7.458E-05	0.00%
CF250	5.129E-18	0.00%
CF251	1.246E-24	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 100000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
HE 3	2.671E-02	0.00%
HE 4	1.774E+02	0.01%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.090E-04	0.00%
B 10	6.317E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	1.606E-06	0.00%
N 14	1.064E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
P 31	1.845E+02	0.01%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	5.146E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	2.613E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	6.636E-02	0.00%
AR 38	1.287E-03	0.00%
AR 40	3.727E-06	0.00%
K 40	5.458E-04	0.00%
K 41	9.348E-04	0.00%
CA 40	1.931E+00	0.00%
CA 41	6.779E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%

CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	1.042E+02	0.01%
NI 58	7.263E+03	0.50%
NI 59	1.456E+01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	2.264E+00	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	4.317E+00	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	1.745E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	6.895E-03	0.00%
SR 88	3.979E+02	0.03%
Y 89	5.190E+02	0.04%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	8.939E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	7.606E+02	0.05%
NB 93M	7.550E-03	0.00%
NB 94	1.966E-01	0.00%
MO 92	5.705E+01	0.00%
MO 93	4.637E-11	0.00%
MO 94	4.244E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.800E-03	0.00%
TC 99	6.208E+02	0.04%

RU 99	2.388E+02	0.02%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.299E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	2.511E+00	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	1.494E+01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	7.099E-07	0.00%
SB126M	5.397E-09	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	1.583E+01	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.963E+02	0.01%
XE128	3.731E+00	0.00%
XE129	8.905E-01	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	4.268E+02	0.03%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	1.353E+01	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%

ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.751E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU151	1.726E+01	0.00%
EU153	1.335E+02	0.01%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
HO166M	1.189E-28	0.00%
ER166	4.501E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.460E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.108E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	7.679E-07	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
TL206	7.688E-17	0.00%
TL207	1.414E-10	0.00%
TL208	3.020E-15	0.00%
TL209	2.327E-11	0.00%
PB204	1.375E-02	0.00%
PB205	3.070E-05	0.00%
PB206	3.129E+01	0.00%
PB207	8.885E-01	0.00%
PB208	5.281E-01	0.00%
PB209	9.698E-08	0.00%
PB210	1.731E-02	0.00%

PB211	1.094E-09	0.00%
PB212	1.782E-12	0.00%
PB214	4.032E-08	0.00%
BI208	3.888E-06	0.00%
BI209	9.023E+00	0.00%
BI210	1.066E-05	0.00%
BI210M	2.963E-05	0.00%
BI211	6.454E-11	0.00%
BI212	1.690E-13	0.00%
BI213	2.279E-08	0.00%
BI214	2.994E-08	0.00%
PO210	2.943E-04	0.00%
PO211	7.918E-16	0.00%
PO212	8.940E-24	0.00%
PO213	3.419E-17	0.00%
PO214	4.119E-15	0.00%
PO215	9.160E-16	0.00%
PO216	7.108E-18	0.00%
PO218	4.675E-09	0.00%
AT217	2.738E-13	0.00%
RN219	2.076E-12	0.00%
RN220	2.684E-15	0.00%
RN222	8.597E-06	0.00%
FR221	2.486E-09	0.00%
FR223	9.635E-12	0.00%
RA223	5.273E-07	0.00%
RA224	1.554E-11	0.00%
RA225	1.124E-05	0.00%
RA226	1.337E+00	0.00%
RA228	9.145E-09	0.00%
AC225	7.593E-06	0.00%
AC227	3.732E-04	0.00%
AC228	9.544E-13	0.00%
TH227	8.664E-07	0.00%
TH228	3.020E-09	0.00%
TH229	2.071E+00	0.00%
TH230	6.493E+01	0.00%
TH231	6.137E-08	0.00%
TH232	1.951E+01	0.00%
TH234	1.359E-05	0.00%
PA231	5.715E-01	0.00%
PA233	6.494E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.583E-10	0.00%
U232	1.520E-08	0.00%
U233	4.988E+01	0.00%
U234	3.183E+02	0.02%
U235	1.510E+04	1.05%
U236	6.913E+03	0.48%
U237	1.979E-14	0.00%
U238	9.361E+05	65.01%
U240	5.370E-13	0.00%
NP236	2.744E-04	0.00%
NP237	1.912E+03	0.13%
NP239	7.329E-09	0.00%
NP240M	4.697E-15	0.00%
PU236	6.121E-10	0.00%
PU239	3.447E+02	0.02%
PU240	5.841E-02	0.00%
PU241	6.399E-07	0.00%
PU242	3.944E+02	0.03%
PU243	5.193E-14	0.00%
PU244	2.808E-02	0.00%
AM241	1.921E-05	0.00%
AM243	8.530E-03	0.00%
CM244	6.155E-13	0.00%
CM245	3.833E-04	0.00%
CM246	6.268E-08	0.00%
CM247	1.457E-03	0.00%

CM248	6.735E-05	0.00%
CF250	6.997E-19	0.00%
CF251	2.163E-41	0.00%
TOTAL	*1.440E+06	99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 200000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
HE 3	2.671E-02	0.00%
HE 4	1.971E+02	0.01%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	2.002E-04	0.00%
B 10	6.350E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	8.940E-12	0.00%
N 14	1.064E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
P 31	1.845E+02	0.01%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	6.169E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	2.075E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	1.191E-01	0.00%
AR 38	1.287E-03	0.00%
AR 40	3.730E-06	0.00%
K 40	5.458E-04	0.00%
K 41	1.325E-03	0.00%
CA 40	1.931E+00	0.00%
CA 41	2.881E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%

CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	1.127E+02	0.01%
NI 58	7.263E+03	0.50%
NI 59	6.121E+00	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	7.789E-01	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	5.802E+00	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	1.255E-05	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	7.309E-03	0.00%
SR 88	3.979E+02	0.03%
Y 89	5.190E+02	0.04%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	8.543E+02	0.06%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	8.006E+02	0.06%
NB 93M	7.215E-03	0.00%
NB 94	6.466E-03	0.00%
MO 92	5.705E+01	0.00%
MO 93	1.152E-19	0.00%
MO 94	4.264E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.704E-03	0.00%
TC 99	4.484E+02	0.03%

RU 99	4.112E+02	0.03%
RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.275E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	4.952E+00	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	7.472E+00	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	3.550E-07	0.00%
SB126M	2.700E-09	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	2.330E+01	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.953E+02	0.01%
XE128	3.731E+00	0.00%
XE129	1.755E+00	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	4.141E+02	0.03%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	2.620E+01	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%

ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.743E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU151	1.726E+01	0.00%
EU153	1.335E+02	0.01%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
ER166	4.501E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.448E-03	0.00%
TA181	3.141E-01	0.00%
TA182	5.068E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	1.536E-06	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
TL206	7.513E-17	0.00%
TL207	1.700E-10	0.00%
TL208	5.524E-15	0.00%
TL209	4.206E-11	0.00%
PB204	1.375E-02	0.00%
PB205	3.063E-05	0.00%
PB206	9.106E+01	0.01%
PB207	2.115E+00	0.00%
PB208	5.282E-01	0.00%
PB209	1.752E-07	0.00%
PB210	2.066E-02	0.00%
PB211	1.315E-09	0.00%

PB212	3.258E-12	0.00%
PB214	4.814E-08	0.00%
BI208	3.220E-06	0.00%
BI209	3.471E+01	0.00%
BI210	1.271E-05	0.00%
BI210M	2.895E-05	0.00%
BI211	7.759E-11	0.00%
BI212	3.091E-13	0.00%
BI213	4.118E-08	0.00%
BI214	3.574E-08	0.00%
PO210	3.513E-04	0.00%
PO211	9.519E-16	0.00%
PO212	1.635E-23	0.00%
PO213	6.177E-17	0.00%
PO214	4.918E-15	0.00%
PO215	1.101E-15	0.00%
PO216	1.300E-17	0.00%
PO218	5.582E-09	0.00%
AT217	4.947E-13	0.00%
RN219	2.495E-12	0.00%
RN220	4.909E-15	0.00%
RN222	1.026E-05	0.00%
FR221	4.492E-09	0.00%
FR223	1.158E-11	0.00%
RA223	6.339E-07	0.00%
RA224	2.843E-11	0.00%
RA225	2.031E-05	0.00%
RA226	1.597E+00	0.00%
RA228	1.856E-08	0.00%
AC225	1.372E-05	0.00%
AC227	4.488E-04	0.00%
AC228	1.937E-12	0.00%
TH227	1.042E-06	0.00%
TH228	5.523E-09	0.00%
TH229	3.743E+00	0.00%
TH230	7.764E+01	0.01%
TH231	6.267E-08	0.00%
TH232	3.960E+01	0.00%
TH234	1.359E-05	0.00%
PA231	6.872E-01	0.00%
PA233	6.287E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.583E-10	0.00%
U232	8.316E-09	0.00%
U233	8.068E+01	0.01%
U234	2.523E+02	0.02%
U235	1.542E+04	1.07%
U236	6.892E+03	0.48%
U237	5.679E-18	0.00%
U238	9.362E+05	65.01%
U240	5.368E-13	0.00%
NP236	1.501E-04	0.00%
NP237	1.851E+03	0.13%
NP239	1.247E-12	0.00%
NP240M	4.696E-15	0.00%
PU236	3.350E-10	0.00%
PU239	1.933E+01	0.00%
PU240	3.695E-06	0.00%
PU241	1.837E-10	0.00%
PU242	3.297E+02	0.02%
PU243	5.170E-14	0.00%
PU244	2.807E-02	0.00%
AM241	5.808E-09	0.00%
AM243	1.451E-06	0.00%
CM244	6.153E-13	0.00%
CM245	1.100E-07	0.00%
CM246	2.720E-14	0.00%
CM247	1.450E-03	0.00%
CM248	5.489E-05	0.00%

CF250	1.303E-20	0.00%
TOTAL	*1.440E+06	99.99%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 500000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
HE 3	2.671E-02	0.00%
HE 4	2.407E+02	0.02%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	1.758E-04	0.00%
B 10	6.440E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
C 14	1.543E-27	0.00%
N 14	1.064E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
P 31	1.845E+02	0.01%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	8.137E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	1.040E-01	0.00%
CL 37	1.342E+00	0.00%
AR 36	2.206E-01	0.00%
AR 38	1.287E-03	0.00%
AR 40	3.739E-06	0.00%
K 40	5.457E-04	0.00%
K 41	1.591E-03	0.00%
CA 40	1.931E+00	0.00%
CA 41	2.211E-05	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%

CR 52	7.866E+03	0.55%
CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	1.183E+02	0.01%
NI 58	7.263E+03	0.50%
NI 59	4.549E-01	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	3.172E-02	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	6.549E+00	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	4.658E-06	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	8.548E-03	0.00%
SR 88	3.979E+02	0.03%
Y 89	5.190E+02	0.04%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	7.457E+02	0.05%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	9.096E+02	0.06%
NB 93M	6.297E-03	0.00%
NB 94	2.299E-07	0.00%
MO 92	5.705E+01	0.00%
MO 94	4.265E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	5.429E-03	0.00%
TC 99	1.689E+02	0.01%
RU 99	6.907E+02	0.05%

RU100	1.222E+02	0.01%
RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.203E+02	0.02%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	1.212E+01	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	9.343E-01	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	4.438E-08	0.00%
SB126M	3.374E-10	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	2.984E+01	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.928E+02	0.01%
XE128	3.731E+00	0.00%
XE129	4.325E+00	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	3.783E+02	0.03%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	6.200E+01	0.00%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%

ND144	1.469E+03	0.10%
ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.718E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU151	1.726E+01	0.00%
EU153	1.335E+02	0.01%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
ER166	4.501E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.416E-03	0.00%
TA181	3.141E-01	0.00%
TA182	4.952E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	3.839E-06	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
TL206	7.009E-17	0.00%
TL207	1.746E-10	0.00%
TL208	1.335E-14	0.00%
TL209	5.914E-11	0.00%
PB204	1.375E-02	0.00%
PB205	3.042E-05	0.00%
PB206	2.543E+02	0.02%
PB207	6.114E+00	0.00%
PB208	5.292E-01	0.00%
PB209	2.464E-07	0.00%
PB210	1.395E-02	0.00%
PB211	1.351E-09	0.00%
PB212	7.876E-12	0.00%

PB214	3.251E-08	0.00%
BI208	1.830E-06	0.00%
BI209	1.566E+02	0.01%
BI210	8.588E-06	0.00%
BI210M	2.701E-05	0.00%
BI211	7.970E-11	0.00%
BI212	7.471E-13	0.00%
BI213	5.790E-08	0.00%
BI214	2.414E-08	0.00%
PO210	2.372E-04	0.00%
PO211	9.779E-16	0.00%
PO212	3.952E-23	0.00%
PO213	8.687E-17	0.00%
PO214	3.321E-15	0.00%
PO215	1.131E-15	0.00%
PO216	3.143E-17	0.00%
PO218	3.770E-09	0.00%
AT217	6.957E-13	0.00%
RN219	2.564E-12	0.00%
RN220	1.186E-14	0.00%
RN222	6.930E-06	0.00%
FR221	6.316E-09	0.00%
FR223	1.190E-11	0.00%
RA223	6.512E-07	0.00%
RA224	6.871E-11	0.00%
RA225	2.856E-05	0.00%
RA226	1.078E+00	0.00%
RA228	4.663E-08	0.00%
AC225	1.930E-05	0.00%
AC227	4.610E-04	0.00%
AC228	4.868E-12	0.00%
TH227	1.070E-06	0.00%
TH228	1.335E-08	0.00%
TH229	5.264E+00	0.00%
TH230	5.270E+01	0.00%
TH231	6.273E-08	0.00%
TH232	9.952E+01	0.01%
TH234	1.359E-05	0.00%
PA231	7.060E-01	0.00%
PA233	5.704E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.583E-10	0.00%
U232	1.363E-09	0.00%
U233	1.146E+02	0.01%
U234	1.370E+02	0.01%
U235	1.543E+04	1.07%
U236	6.832E+03	0.47%
U237	1.343E-28	0.00%
U238	9.362E+05	65.01%
U240	5.359E-13	0.00%
NP236	2.462E-05	0.00%
NP237	1.680E+03	0.12%
NP239	5.725E-13	0.00%
NP240M	4.688E-15	0.00%
PU236	5.492E-11	0.00%
PU239	3.419E-03	0.00%
PU240	2.178E-06	0.00%
PU241	4.344E-21	0.00%
PU242	1.926E+02	0.01%
PU243	5.103E-14	0.00%
PU244	2.802E-02	0.00%
AM241	1.374E-19	0.00%
AM243	6.660E-07	0.00%
CM244	6.143E-13	0.00%
CM245	2.602E-18	0.00%
CM246	1.145E-22	0.00%
CM247	1.431E-03	0.00%
CM248	2.973E-05	0.00%
CF250	8.418E-26	0.00%

TOTAL *1.440E+06 99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: PWR 37000
ENRICHMENT: 3.75%
DECAY TIME: 1000000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	3.425E+00	0.00%
H 2	5.373E-03	0.00%
HE 3	2.671E-02	0.00%
HE 4	2.963E+02	0.02%
LI 6	1.087E-02	0.00%
LI 7	1.083E+00	0.00%
BE 9	9.804E-04	0.00%
BE 10	1.415E-04	0.00%
B 10	6.565E-04	0.00%
B 11	9.755E-01	0.00%
C 12	1.545E+02	0.01%
C 13	9.979E+00	0.00%
N 14	1.064E+02	0.01%
N 15	4.321E-01	0.00%
O 16	1.343E+05	9.33%
O 17	5.440E+01	0.00%
O 18	3.090E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	3.696E-04	0.00%
NE 21	1.287E-05	0.00%
NE 22	1.917E-05	0.00%
NA 23	1.497E+01	0.00%
MG 24	1.591E+00	0.00%
MG 25	2.060E-01	0.00%
MG 26	2.357E-01	0.00%
AL 27	1.014E+02	0.01%
SI 28	3.481E+02	0.02%
SI 29	1.829E+01	0.00%
SI 30	1.254E+01	0.00%
P 31	1.845E+02	0.01%
S 32	1.922E+01	0.00%
S 33	1.680E-01	0.00%
S 34	9.029E-01	0.00%
S 36	9.489E-03	0.00%
CL 35	3.637E+00	0.00%
CL 36	3.288E-02	0.00%
CL 37	1.342E+00	0.00%
AR 36	2.903E-01	0.00%
AR 38	1.287E-03	0.00%
AR 40	3.755E-06	0.00%
K 40	5.455E-04	0.00%
K 41	1.612E-03	0.00%
CA 40	1.931E+00	0.00%
CA 41	3.064E-07	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.792E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.052E-04	0.00%
CA 48	4.537E-03	0.00%
SC 45	1.001E-04	0.00%
TI 46	8.777E+00	0.00%
TI 47	8.091E+00	0.00%
TI 48	8.092E+01	0.01%
TI 49	7.125E+00	0.00%
TI 50	6.049E+00	0.00%
V 50	3.903E-02	0.00%
V 51	1.289E+01	0.00%
CR 50	3.886E+02	0.03%
CR 52	7.866E+03	0.55%

CR 53	9.112E+02	0.06%
CR 54	2.436E+02	0.02%
MN 55	7.098E+02	0.05%
FE 54	1.493E+03	0.10%
FE 56	2.446E+04	1.70%
FE 57	6.179E+02	0.04%
FE 58	8.280E+01	0.01%
CO 59	1.188E+02	0.01%
NI 58	7.263E+03	0.50%
NI 59	5.977E-03	0.00%
NI 60	2.892E+03	0.20%
NI 61	1.371E+02	0.01%
NI 62	4.037E+02	0.03%
NI 64	1.074E+02	0.01%
CU 63	2.020E+01	0.00%
CU 65	6.286E+00	0.00%
ZN 64	1.915E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.672E+00	0.00%
ZN 68	7.874E+00	0.00%
ZN 70	2.725E-01	0.00%
GA 69	3.135E-02	0.00%
GA 71	5.135E-05	0.00%
GE 70	2.038E-04	0.00%
GE 72	2.337E-02	0.00%
GE 73	4.876E-02	0.00%
GE 74	1.070E-01	0.00%
GE 76	5.579E-01	0.00%
AS 75	2.214E-01	0.00%
SE 76	6.874E-03	0.00%
SE 77	1.147E+00	0.00%
SE 78	2.700E+00	0.00%
SE 79	1.529E-04	0.00%
SE 80	1.501E+01	0.00%
SE 82	3.796E+01	0.00%
BR 79	6.581E+00	0.00%
BR 81	2.424E+01	0.00%
KR 80	2.432E-04	0.00%
KR 81	8.932E-07	0.00%
KR 82	1.183E+00	0.00%
KR 83	4.685E+01	0.00%
KR 84	1.277E+02	0.01%
KR 86	2.157E+02	0.01%
RB 85	1.377E+02	0.01%
RB 87	2.770E+02	0.02%
SR 86	5.282E-01	0.00%
SR 87	1.060E-02	0.00%
SR 88	3.979E+02	0.03%
Y 89	5.190E+02	0.04%
ZR 90	1.281E+05	8.90%
ZR 91	2.862E+04	1.99%
ZR 92	4.413E+04	3.06%
ZR 93	5.946E+02	0.04%
ZR 94	4.585E+04	3.18%
ZR 96	8.267E+03	0.57%
NB 93	1.061E+03	0.07%
NB 93M	5.021E-03	0.00%
NB 94	8.851E-15	0.00%
MO 92	5.705E+01	0.00%
MO 94	4.265E+01	0.00%
MO 95	9.258E+02	0.06%
MO 96	1.184E+02	0.01%
MO 97	9.628E+02	0.07%
MO 98	1.008E+03	0.07%
MO100	1.079E+03	0.07%
TC 98	4.999E-03	0.00%
TC 99	3.319E+01	0.00%
RU 99	8.264E+02	0.06%
RU100	1.222E+02	0.01%

RU101	8.554E+02	0.06%
RU102	8.604E+02	0.06%
RU104	5.907E+02	0.04%
RH103	4.825E+02	0.03%
PD104	2.690E+02	0.02%
PD105	4.132E+02	0.03%
PD106	3.812E+02	0.03%
PD107	2.089E+02	0.01%
PD108	1.591E+02	0.01%
PD110	5.256E+01	0.00%
AG107	2.356E+01	0.00%
AG109	7.852E+01	0.01%
CD106	3.063E-01	0.00%
CD108	2.205E-01	0.00%
CD110	4.264E+01	0.00%
CD111	3.271E+01	0.00%
CD112	2.396E+01	0.00%
CD113	1.759E-01	0.00%
CD114	3.438E+01	0.00%
CD116	1.082E+01	0.00%
IN113	9.892E-01	0.00%
IN115	2.434E+00	0.00%
SN112	3.806E+01	0.00%
SN114	2.653E+01	0.00%
SN115	1.407E+01	0.00%
SN116	5.921E+02	0.04%
SN117	3.265E+02	0.02%
SN118	9.976E+02	0.07%
SN119	3.717E+02	0.03%
SN120	1.356E+03	0.09%
SN122	2.044E+02	0.01%
SN124	2.517E+02	0.02%
SN126	2.920E-02	0.00%
SB121	1.087E+01	0.00%
SB123	1.120E+01	0.00%
SB126	1.388E-09	0.00%
SB126M	1.055E-11	0.00%
TE122	8.284E-01	0.00%
TE123	1.233E-02	0.00%
TE124	5.240E-01	0.00%
TE125	2.297E+01	0.00%
TE126	3.074E+01	0.00%
TE128	1.213E+02	0.01%
TE130	3.920E+02	0.03%
I127	5.984E+01	0.00%
I129	1.885E+02	0.01%
XE128	3.731E+00	0.00%
XE129	8.534E+00	0.00%
XE130	1.299E+01	0.00%
XE131	4.585E+02	0.03%
XE132	1.219E+03	0.08%
XE134	1.643E+03	0.11%
XE136	2.496E+03	0.17%
CS133	1.239E+03	0.09%
CS135	3.254E+02	0.02%
BA132	1.741E-03	0.00%
BA134	1.989E+02	0.01%
BA135	1.149E+02	0.01%
BA136	2.485E+01	0.00%
BA137	1.378E+03	0.10%
BA138	1.431E+03	0.10%
LA138	6.520E-03	0.00%
LA139	1.364E+03	0.09%
CE140	1.378E+03	0.10%
CE142	1.263E+03	0.09%
PR141	1.251E+03	0.09%
ND142	2.926E+01	0.00%
ND143	8.971E+02	0.06%
ND144	1.469E+03	0.10%

ND145	7.491E+02	0.05%
ND146	7.751E+02	0.05%
ND148	4.120E+02	0.03%
ND150	1.953E+02	0.01%
SM146	8.675E-03	0.00%
SM147	2.225E+02	0.02%
SM148	2.039E+02	0.01%
SM149	3.980E+00	0.00%
SM150	3.392E+02	0.02%
SM152	1.375E+02	0.01%
SM154	4.041E+01	0.00%
EU151	1.726E+01	0.00%
EU153	1.335E+02	0.01%
GD152	7.820E-02	0.00%
GD154	4.285E+01	0.00%
GD155	1.539E+01	0.00%
GD156	7.000E+01	0.00%
GD157	1.284E-01	0.00%
GD158	2.071E+01	0.00%
GD160	1.894E+00	0.00%
TB159	2.795E+00	0.00%
DY160	3.322E-01	0.00%
DY161	4.607E-01	0.00%
DY162	3.737E-01	0.00%
DY163	3.166E-01	0.00%
DY164	7.499E-02	0.00%
HO165	1.475E-01	0.00%
ER166	4.501E-02	0.00%
ER167	3.893E-03	0.00%
ER168	6.316E-03	0.00%
TM169	4.406E-05	0.00%
YB170	1.372E-05	0.00%
LU175	1.412E-02	0.00%
LU176	4.613E-04	0.00%
HF174	1.235E-02	0.00%
HF176	6.281E-01	0.00%
HF177	1.392E-01	0.00%
HF178	2.881E+00	0.00%
HF179	6.800E+00	0.00%
HF180	9.186E+00	0.00%
HF182	1.362E-03	0.00%
TA181	3.141E-01	0.00%
TA182	4.766E-11	0.00%
W180	8.108E-03	0.00%
W182	1.288E+00	0.00%
W183	1.419E+00	0.00%
W184	2.496E+00	0.00%
W186	1.444E+00	0.00%
RE185	1.746E-02	0.00%
RE187	5.539E-01	0.00%
OS186	9.659E-03	0.00%
OS187	7.679E-06	0.00%
OS188	9.784E-02	0.00%
OS189	2.868E-03	0.00%
OS190	3.954E-04	0.00%
TL206	6.244E-17	0.00%
TL207	1.745E-10	0.00%
TL208	2.652E-14	0.00%
TL209	5.675E-11	0.00%
PB204	1.375E-02	0.00%
PB205	3.007E-05	0.00%
PB206	4.008E+02	0.03%
PB207	1.280E+01	0.00%
PB208	5.325E-01	0.00%
PB209	2.365E-07	0.00%
PB210	6.637E-03	0.00%
PB211	1.350E-09	0.00%
PB212	1.564E-11	0.00%
PB214	1.545E-08	0.00%

BI208	7.136E-07	0.00%
BI209	3.854E+02	0.03%
BI210	4.084E-06	0.00%
BI210M	2.407E-05	0.00%
BI211	7.967E-11	0.00%
BI212	1.483E-12	0.00%
BI213	5.556E-08	0.00%
BI214	1.148E-08	0.00%
PO210	1.128E-04	0.00%
PO211	9.776E-16	0.00%
PO212	7.852E-23	0.00%
PO213	8.337E-17	0.00%
PO214	1.579E-15	0.00%
PO215	1.131E-15	0.00%
PO216	6.242E-17	0.00%
PO218	1.793E-09	0.00%
AT217	6.676E-13	0.00%
RN219	2.563E-12	0.00%
RN220	2.357E-14	0.00%
RN222	3.296E-06	0.00%
FR221	6.062E-09	0.00%
FR223	1.189E-11	0.00%
RA223	6.509E-07	0.00%
RA224	1.365E-10	0.00%
RA225	2.741E-05	0.00%
RA226	5.127E-01	0.00%
RA228	9.287E-08	0.00%
AC225	1.851E-05	0.00%
AC227	4.608E-04	0.00%
AC228	9.695E-12	0.00%
TH227	1.069E-06	0.00%
TH228	2.652E-08	0.00%
TH229	5.051E+00	0.00%
TH230	2.510E+01	0.00%
TH231	6.270E-08	0.00%
TH232	1.982E+02	0.01%
TH234	1.359E-05	0.00%
PA231	7.057E-01	0.00%
PA233	4.852E-05	0.00%
PA234	2.047E-10	0.00%
PA234M	4.583E-10	0.00%
U232	6.695E-11	0.00%
U233	1.104E+02	0.01%
U234	7.150E+01	0.00%
U235	1.542E+04	1.07%
U236	6.731E+03	0.47%
U237	2.618E-46	0.00%
U238	9.362E+05	65.01%
U240	5.341E-13	0.00%
NP236	1.208E-06	0.00%
NP237	1.429E+03	0.10%
NP239	5.599E-13	0.00%
NP240M	4.672E-15	0.00%
PU236	2.697E-12	0.00%
PU239	2.092E-06	0.00%
PU240	2.171E-06	0.00%
PU241	8.467E-39	0.00%
PU242	7.864E+01	0.01%
PU243	4.991E-14	0.00%
PU244	2.793E-02	0.00%
AM241	2.677E-37	0.00%
AM243	6.513E-07	0.00%
CM244	6.122E-13	0.00%
CM245	5.072E-36	0.00%
CM246	2.562E-31	0.00%
CM247	1.399E-03	0.00%
CM248	1.070E-05	0.00%
CF250	1.883E-34	0.00%

TOTAL *1.440E+06 99.98%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 1 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	5.341E-02	0.00%
HE 3	1.491E-03	0.00%
HE 4	1.652E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.102E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.900E-10	0.00%
P 31	5.169E+01	0.00%
P 32	7.109E-12	0.00%
P 33	7.678E-13	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 35	2.675E-05	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.110E-06	0.00%
AR 37	2.349E-09	0.00%
AR 38	8.095E-04	0.00%
AR 39	1.104E-06	0.00%
AR 40	1.425E-06	0.00%
K 39	6.583E-09	0.00%
K 40	3.251E-04	0.00%
K 41	6.408E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.005E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	3.620E-06	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%

SC 45	6.093E-05	0.00%
SC 46	3.583E-06	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 51	1.080E-05	0.00%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	1.226E-02	0.00%
MN 55	8.751E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	4.695E-01	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
FE 59	7.831E-06	0.00%
CO 58	2.573E-03	0.00%
CO 59	1.463E+02	0.01%
CO 60	3.490E+00	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.475E+01	0.00%
NI 60	4.330E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	2.812E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.405E+01	0.00%
CU 65	6.553E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 65	3.463E-03	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.793E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	9.983E-05	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.859E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	1.498E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	6.658E+01	0.00%
RB 86	1.459E-08	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.390E-03	0.00%
SR 88	2.369E+02	0.01%

SR 89	1.502E-01	0.00%
SR 90	3.536E+02	0.02%
Y 89	3.098E+02	0.02%
Y 90	8.868E-02	0.00%
Y 91	4.536E-01	0.00%
ZR 90	2.654E+05	15.38%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.347E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 95	1.060E+00	0.00%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	6.154E-04	0.00%
NB 94	3.037E-01	0.00%
NB 95	1.310E+00	0.00%
NB 95M	4.434E-04	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.740E-04	0.00%
MO 94	9.097E-01	0.00%
MO 95	5.281E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.141E+02	0.03%
RU 98	7.151E-15	0.00%
RU 99	3.929E-03	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU103	4.947E-02	0.00%
RU104	3.141E+02	0.02%
RU106	4.474E+01	0.00%
RH102	2.502E-04	0.00%
RH103	3.138E+02	0.02%
RH103M	4.425E-05	0.00%
RH106	4.205E-05	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.412E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.659E-02	0.00%
AG108	9.634E-13	0.00%
AG108M	3.052E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	2.201E-10	0.00%
AG110	1.762E-09	0.00%
AG110M	1.162E-01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	2.228E-04	0.00%
CD110	1.515E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.471E-01	0.00%
CD113M	1.273E-01	0.00%
CD114	2.279E+01	0.00%
CD115M	1.510E-04	0.00%
CD116	6.653E+00	0.00%
IN113	9.069E-01	0.00%
IN113M	8.185E-06	0.00%
IN114	5.220E-10	0.00%
IN114M	3.246E-05	0.00%
IN115	2.030E+00	0.00%
IN115M	4.189E-11	0.00%

SN112	7.972E+01	0.00%
SN113	1.363E-02	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN117M	1.868E-09	0.00%
SN118	2.064E+03	0.12%
SN119	7.510E+02	0.04%
SN119M	7.071E-01	0.00%
SN120	2.805E+03	0.16%
SN121M	1.558E-02	0.00%
SN122	4.091E+02	0.02%
SN123	4.611E-02	0.00%
SN124	5.042E+02	0.03%
SN125	4.508E-13	0.00%
SN126	1.611E+01	0.00%
SB121	7.445E+00	0.00%
SB123	6.229E+00	0.00%
SB124	4.755E-04	0.00%
SB125	8.213E+00	0.00%
SB126	7.656E-07	0.00%
SB126M	5.821E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.853E-03	0.00%
TE123M	7.902E-05	0.00%
TE124	1.618E-01	0.00%
TE125	5.833E+00	0.00%
TE125M	1.146E-01	0.00%
TE126	4.267E-01	0.00%
TE127	3.302E-04	0.00%
TE127M	9.431E-02	0.00%
TE128	6.672E+01	0.00%
TE129	5.188E-07	0.00%
TE129M	5.540E-04	0.00%
TE130	2.183E+02	0.01%
I127	3.299E+01	0.00%
I129	1.112E+02	0.01%
XE127	3.936E-10	0.00%
XE128	1.201E+00	0.00%
XE129	4.283E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE131M	1.585E-10	0.00%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	3.969E+01	0.00%
CS135	2.810E+02	0.02%
CS136	1.716E-09	0.00%
CS137	7.406E+02	0.04%
BA132	5.832E-04	0.00%
BA134	3.297E+01	0.00%
BA135	7.428E-02	0.00%
BA136	1.051E+01	0.00%
BA136M	7.693E-17	0.00%
BA137	4.131E+01	0.00%
BA137M	1.133E-04	0.00%
BA138	8.205E+02	0.05%
BA140	4.066E-08	0.00%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
LA140	6.132E-09	0.00%
CE140	7.858E+02	0.05%
CE141	1.645E-02	0.00%
CE142	7.261E+02	0.04%
CE144	9.975E+01	0.01%
PR141	7.256E+02	0.04%

PR143	1.337E-07	0.00%
PR144	4.211E-03	0.00%
PR144M	2.104E-05	0.00%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	6.800E+02	0.04%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND147	6.304E-10	0.00%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	2.319E-03	0.00%
PM147	9.358E+01	0.01%
PM148	1.734E-05	0.00%
PM148M	2.366E-03	0.00%
SM146	1.877E-03	0.00%
SM147	7.817E+01	0.00%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	1.261E+01	0.00%
SM152	8.712E+01	0.01%
SM154	2.113E+01	0.00%
EU150	1.565E-07	0.00%
EU151	1.107E-01	0.00%
EU152	4.660E-02	0.00%
EU153	6.485E+01	0.00%
EU154	1.337E+01	0.00%
EU155	5.502E+00	0.00%
EU156	7.010E-08	0.00%
GD152	2.508E+00	0.00%
GD153	6.852E-02	0.00%
GD154	3.007E+01	0.00%
GD155	3.650E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
TB160	1.265E-02	0.00%
DY160	1.532E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	4.005E-04	0.00%
ER166	1.625E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	2.822E-09	0.00%
TM169	1.089E-05	0.00%
TM170	1.464E-07	0.00%
TM171	3.832E-08	0.00%
YB170	1.907E-06	0.00%
YB171	4.921E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.388E-02	0.00%
LU176	6.049E-04	0.00%
LU177	1.962E-09	0.00%
LU177M	1.971E-07	0.00%
HF174	3.676E-02	0.00%
HF175	7.482E-05	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%

HF180	1.699E+01	0.00%
HF181	9.825E-05	0.00%
HF182	1.400E-03	0.00%
TA181	4.055E-01	0.00%
TA182	8.074E-04	0.00%
W180	1.491E-02	0.00%
W181	3.018E-05	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W185	1.364E-04	0.00%
W186	2.925E+00	0.00%
W188	4.642E-06	0.00%
RE185	2.143E-02	0.00%
RE187	6.719E-01	0.00%
RE188	4.780E-08	0.00%
OS186	6.805E-03	0.00%
OS187	1.957E-11	0.00%
OS188	7.143E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.705E-09	0.00%
IR191	4.336E-07	0.00%
IR192	2.122E-09	0.00%
IR193	1.310E-08	0.00%
PT192	1.331E-07	0.00%
PT194	1.169E-09	0.00%
TL205	1.028E-12	0.00%
TL206	4.895E-17	0.00%
TL207	3.799E-15	0.00%
TL208	2.587E-12	0.00%
TL209	2.265E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.261E-01	0.00%
PB209	9.441E-15	0.00%
PB210	2.297E-11	0.00%
PB211	2.939E-14	0.00%
PB212	1.526E-09	0.00%
PB214	1.007E-15	0.00%
BI208	2.760E-06	0.00%
BI209	4.000E-01	0.00%
BI210	1.414E-14	0.00%
BI210M	1.887E-05	0.00%
BI211	1.734E-15	0.00%
BI212	1.447E-10	0.00%
BI213	2.218E-15	0.00%
BI214	7.478E-16	0.00%
PO210	9.631E-07	0.00%
PO211	2.128E-20	0.00%
PO212	7.657E-21	0.00%
PO213	3.327E-24	0.00%
PO214	1.029E-22	0.00%
PO215	2.461E-20	0.00%
PO216	6.088E-15	0.00%
PO218	1.168E-16	0.00%
AT217	2.664E-20	0.00%
RN219	5.577E-17	0.00%
RN220	2.298E-12	0.00%
RN222	2.147E-13	0.00%
FR221	2.419E-16	0.00%
FR223	2.586E-16	0.00%
RA223	1.417E-11	0.00%
RA224	1.331E-08	0.00%
RA225	1.094E-12	0.00%
RA226	3.340E-08	0.00%
RA228	1.386E-14	0.00%

AC225	7.390E-13	0.00%
AC227	1.002E-08	0.00%
AC228	1.447E-18	0.00%
TH227	2.328E-11	0.00%
TH228	2.582E-06	0.00%
TH229	2.016E-07	0.00%
TH230	1.948E-03	0.00%
TH231	5.106E-08	0.00%
TH232	2.258E-04	0.00%
TH234	1.387E-05	0.00%
PA231	2.733E-04	0.00%
PA233	8.735E-06	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	2.644E-04	0.00%
U233	1.053E-03	0.00%
U234	1.944E+02	0.01%
U235	1.256E+04	0.73%
U236	3.056E+03	0.18%
U237	2.666E-05	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	8.373E-07	0.00%
NP236	1.650E-04	0.00%
NP237	2.572E+02	0.01%
NP238	2.090E-07	0.00%
NP239	2.366E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	2.708E-04	0.00%
PU237	1.830E-07	0.00%
PU238	5.866E+01	0.00%
PU239	4.345E+03	0.25%
PU240	1.354E+03	0.08%
PU241	8.611E+02	0.05%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	7.007E+01	0.00%
AM242	1.334E-05	0.00%
AM242M	1.115E+00	0.00%
AM243	2.753E+01	0.00%
CM241	2.249E-10	0.00%
CM242	1.272E+00	0.00%
CM243	1.158E-01	0.00%
CM244	4.830E+00	0.00%
CM245	1.343E-01	0.00%
CM246	8.210E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	5.130E-09	0.00%
CF250	1.779E-09	0.00%
TOTAL	*1.725E+06	99.96%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 2 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	5.050E-02	0.00%
HE 3	2.600E-03	0.00%
HE 4	1.687E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.102E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.895E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.949E-14	0.00%
P 33	3.071E-17	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 35	1.506E-06	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.588E-06	0.00%
AR 37	1.704E-12	0.00%
AR 38	8.095E-04	0.00%
AR 39	1.101E-06	0.00%
AR 40	1.425E-06	0.00%
K 39	9.432E-09	0.00%
K 40	3.251E-04	0.00%
K 41	6.417E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.005E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	7.656E-07	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%

SC 45	6.381E-05	0.00%
SC 46	1.746E-07	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 51	1.162E-09	0.00%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	5.454E-03	0.00%
MN 55	8.753E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	3.596E-01	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
FE 59	2.821E-08	0.00%
CO 58	7.194E-05	0.00%
CO 59	1.463E+02	0.01%
CO 60	3.060E+00	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.475E+01	0.00%
NI 60	4.330E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	2.791E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.407E+01	0.00%
CU 65	6.555E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 65	1.226E-03	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.793E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	1.404E-04	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.859E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	1.404E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	6.752E+01	0.00%
RB 86	1.865E-14	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.390E-03	0.00%
SR 88	2.369E+02	0.01%

SR 89	9.985E-04	0.00%
SR 90	3.453E+02	0.02%
Y 89	3.100E+02	0.02%
Y 90	8.660E-02	0.00%
Y 91	5.989E-03	0.00%
ZR 90	2.654E+05	15.38%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.347E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 95	2.026E-02	0.00%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	8.519E-04	0.00%
NB 94	3.037E-01	0.00%
NB 95	2.559E-02	0.00%
NB 95M	8.479E-06	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.739E-04	0.00%
MO 94	9.097E-01	0.00%
MO 95	5.305E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.141E+02	0.03%
RU 98	1.104E-14	0.00%
RU 99	5.607E-03	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU103	7.860E-05	0.00%
RU104	3.141E+02	0.02%
RU106	2.249E+01	0.00%
RH102	1.971E-04	0.00%
RH103	3.138E+02	0.02%
RH103M	7.029E-08	0.00%
RH106	2.114E-05	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.635E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.660E-02	0.00%
AG108	9.586E-13	0.00%
AG108M	3.035E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	1.275E-10	0.00%
AG110	6.398E-10	0.00%
AG110M	4.222E-02	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	1.291E-04	0.00%
CD110	1.522E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.471E-01	0.00%
CD113M	1.214E-01	0.00%
CD114	2.279E+01	0.00%
CD115M	5.167E-07	0.00%
CD116	6.653E+00	0.00%
IN113	9.250E-01	0.00%
IN113M	9.074E-07	0.00%
IN114	3.142E-12	0.00%
IN114M	1.952E-07	0.00%
IN115	2.030E+00	0.00%
IN115M	1.434E-13	0.00%

SN112	7.972E+01	0.00%
SN113	1.511E-03	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN117M	2.633E-17	0.00%
SN118	2.064E+03	0.12%
SN119	7.514E+02	0.04%
SN119M	2.516E-01	0.00%
SN120	2.805E+03	0.16%
SN121M	1.537E-02	0.00%
SN122	4.091E+02	0.02%
SN123	6.495E-03	0.00%
SN124	5.042E+02	0.03%
SN125	1.771E-24	0.00%
SN126	1.611E+01	0.00%
SB121	7.445E+00	0.00%
SB123	6.268E+00	0.00%
SB124	7.090E-06	0.00%
SB125	6.394E+00	0.00%
SB126	7.656E-07	0.00%
SB126M	5.821E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.923E-03	0.00%
TE123M	9.526E-06	0.00%
TE124	1.622E-01	0.00%
TE125	7.684E+00	0.00%
TE125M	8.944E-02	0.00%
TE126	4.268E-01	0.00%
TE127	3.236E-05	0.00%
TE127M	9.244E-03	0.00%
TE128	6.672E+01	0.00%
TE129	2.770E-10	0.00%
TE129M	2.958E-07	0.00%
TE130	2.183E+02	0.01%
I127	3.307E+01	0.00%
I129	1.112E+02	0.01%
XE127	3.762E-13	0.00%
XE128	1.201E+00	0.00%
XE129	4.287E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE131M	9.102E-20	0.00%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	2.836E+01	0.00%
CS135	2.810E+02	0.02%
CS136	6.957E-18	0.00%
CS137	7.237E+02	0.04%
BA132	5.832E-04	0.00%
BA134	4.433E+01	0.00%
BA135	7.437E-02	0.00%
BA136	1.051E+01	0.00%
BA136M	3.119E-25	0.00%
BA137	5.827E+01	0.00%
BA137M	1.107E-04	0.00%
BA138	8.205E+02	0.05%
BA140	1.028E-16	0.00%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
LA140	1.551E-17	0.00%
CE140	7.858E+02	0.05%
CE141	6.827E-06	0.00%
CE142	7.261E+02	0.04%
CE144	4.092E+01	0.00%
PR141	7.256E+02	0.04%

PR143	1.048E-15	0.00%
PR144	1.728E-03	0.00%
PR144M	8.638E-06	0.00%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.395E+02	0.04%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND147	7.218E-20	0.00%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	2.045E-03	0.00%
PM147	7.185E+01	0.00%
PM148	3.771E-08	0.00%
PM148M	5.148E-06	0.00%
SM146	1.981E-03	0.00%
SM147	9.997E+01	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	1.251E+01	0.00%
SM152	8.712E+01	0.01%
SM154	2.113E+01	0.00%
EU150	1.534E-07	0.00%
EU151	2.074E-01	0.00%
EU152	4.429E-02	0.00%
EU153	6.489E+01	0.00%
EU154	1.233E+01	0.00%
EU155	4.785E+00	0.00%
EU156	4.027E-15	0.00%
GD152	2.509E+00	0.00%
GD153	2.407E-02	0.00%
GD154	3.114E+01	0.00%
GD155	4.411E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
TB160	3.813E-04	0.00%
DY160	1.544E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	4.003E-04	0.00%
ER166	1.625E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.006E-09	0.00%
TM169	1.089E-05	0.00%
TM170	2.045E-08	0.00%
TM171	2.671E-08	0.00%
YB170	2.034E-06	0.00%
YB171	6.088E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
LU177	3.831E-10	0.00%
LU177M	3.849E-08	0.00%
HF174	3.676E-02	0.00%
HF175	2.011E-06	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%

HF180	1.699E+01	0.00%
HF181	2.506E-07	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	8.933E-05	0.00%
W180	1.491E-02	0.00%
W181	3.736E-06	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W185	4.686E-06	0.00%
W186	2.925E+00	0.00%
W188	1.209E-07	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
RE188	1.245E-09	0.00%
OS186	6.805E-03	0.00%
OS187	2.890E-11	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.804E-09	0.00%
IR191	4.336E-07	0.00%
IR192	6.941E-11	0.00%
IR193	1.310E-08	0.00%
PT192	1.351E-07	0.00%
PT194	1.169E-09	0.00%
TL205	1.472E-12	0.00%
TL206	4.895E-17	0.00%
TL207	5.858E-15	0.00%
TL208	4.146E-12	0.00%
TL209	2.322E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.261E-01	0.00%
PB209	9.672E-15	0.00%
PB210	3.935E-11	0.00%
PB211	4.531E-14	0.00%
PB212	2.446E-09	0.00%
PB214	1.603E-15	0.00%
BI208	2.760E-06	0.00%
BI209	4.000E-01	0.00%
BI210	2.422E-14	0.00%
BI210M	1.887E-05	0.00%
BI211	2.674E-15	0.00%
BI212	2.320E-10	0.00%
BI213	2.273E-15	0.00%
BI214	1.190E-15	0.00%
PO210	1.547E-07	0.00%
PO211	3.280E-20	0.00%
PO212	1.227E-20	0.00%
PO213	3.410E-24	0.00%
PO214	1.637E-22	0.00%
PO215	3.794E-20	0.00%
PO216	9.761E-15	0.00%
PO218	1.858E-16	0.00%
AT217	2.731E-20	0.00%
RN219	8.598E-17	0.00%
RN220	3.685E-12	0.00%
RN222	3.416E-13	0.00%
FR221	2.480E-16	0.00%
FR223	3.985E-16	0.00%
RA223	2.184E-11	0.00%
RA224	2.134E-08	0.00%
RA225	1.121E-12	0.00%
RA226	5.315E-08	0.00%
RA228	2.503E-14	0.00%

AC225	7.574E-13	0.00%
AC227	1.544E-08	0.00%
AC228	2.613E-18	0.00%
TH227	3.589E-11	0.00%
TH228	4.137E-06	0.00%
TH229	2.067E-07	0.00%
TH230	2.493E-03	0.00%
TH231	5.106E-08	0.00%
TH232	3.151E-04	0.00%
TH234	1.387E-05	0.00%
PA231	2.860E-04	0.00%
PA233	8.740E-06	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	3.191E-04	0.00%
U233	1.144E-03	0.00%
U234	1.949E+02	0.01%
U235	1.256E+04	0.73%
U236	3.056E+03	0.18%
U237	2.540E-05	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	4.419E-07	0.00%
NP236	1.650E-04	0.00%
NP237	2.573E+02	0.01%
NP238	2.081E-07	0.00%
NP239	2.366E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	2.124E-04	0.00%
PU237	7.100E-10	0.00%
PU238	5.918E+01	0.00%
PU239	4.345E+03	0.25%
PU240	1.354E+03	0.08%
PU241	8.206E+02	0.05%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	1.104E+02	0.01%
AM242	1.328E-05	0.00%
AM242M	1.110E+00	0.00%
AM243	2.753E+01	0.00%
CM241	1.985E-13	0.00%
CM242	2.717E-01	0.00%
CM243	1.130E-01	0.00%
CM244	4.649E+00	0.00%
CM245	1.343E-01	0.00%
CM246	8.210E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	2.326E-09	0.00%
CF250	1.687E-09	0.00%
TOTAL	*1.725E+06	99.96%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 3 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	4.774E-02	0.00%
HE 3	3.649E-03	0.00%
HE 4	1.710E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.101E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.889E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.945E-14	0.00%
P 33	1.228E-21	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 35	8.480E-08	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.066E-06	0.00%
AR 37	1.236E-15	0.00%
AR 38	8.095E-04	0.00%
AR 39	1.098E-06	0.00%
AR 40	1.425E-06	0.00%
K 39	1.226E-08	0.00%
K 40	3.251E-04	0.00%
K 41	6.425E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.005E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	1.619E-07	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%

SC 45	6.441E-05	0.00%
SC 46	8.511E-09	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 51	1.250E-13	0.00%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	2.426E-03	0.00%
MN 55	8.753E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	2.755E-01	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
FE 59	1.017E-10	0.00%
CO 58	2.011E-06	0.00%
CO 59	1.463E+02	0.01%
CO 60	2.683E+00	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.475E+01	0.00%
NI 60	4.330E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	2.770E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.409E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 65	4.343E-04	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.793E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	1.809E-04	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.859E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	1.317E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	6.840E+01	0.00%
RB 86	2.386E-20	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.390E-03	0.00%
SR 88	2.369E+02	0.01%

SR 89	6.638E-06	0.00%
SR 90	3.372E+02	0.02%
Y 89	3.100E+02	0.02%
Y 90	8.456E-02	0.00%
Y 91	7.907E-05	0.00%
ZR 90	2.654E+05	15.38%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.347E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 95	3.874E-04	0.00%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	1.076E-03	0.00%
NB 94	3.037E-01	0.00%
NB 95	4.897E-04	0.00%
NB 95M	1.621E-07	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.739E-04	0.00%
MO 94	9.098E-01	0.00%
MO 95	5.305E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.141E+02	0.03%
RU 98	1.494E-14	0.00%
RU 99	7.283E-03	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU103	1.249E-07	0.00%
RU104	3.141E+02	0.02%
RU106	1.131E+01	0.00%
RH102	1.552E-04	0.00%
RH103	3.138E+02	0.02%
RH103M	1.116E-10	0.00%
RH106	1.063E-05	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.748E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.661E-02	0.00%
AG108	9.533E-13	0.00%
AG108M	3.019E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	7.389E-11	0.00%
AG110	2.323E-10	0.00%
AG110M	1.533E-02	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	7.480E-05	0.00%
CD110	1.525E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.471E-01	0.00%
CD113M	1.157E-01	0.00%
CD114	2.279E+01	0.00%
CD115M	1.768E-09	0.00%
CD116	6.653E+00	0.00%
IN113	9.320E-01	0.00%
IN113M	1.006E-07	0.00%
IN114	1.890E-14	0.00%
IN114M	1.175E-09	0.00%
IN115	2.030E+00	0.00%
IN115M	4.909E-16	0.00%

SN112	7.972E+01	0.00%
SN113	1.675E-04	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN117M	3.710E-25	0.00%
SN118	2.064E+03	0.12%
SN119	7.516E+02	0.04%
SN119M	8.953E-02	0.00%
SN120	2.805E+03	0.16%
SN121M	1.515E-02	0.00%
SN122	4.091E+02	0.02%
SN123	9.148E-04	0.00%
SN124	5.042E+02	0.03%
SN125	6.960E-36	0.00%
SN126	1.611E+01	0.00%
SB121	7.445E+00	0.00%
SB123	6.274E+00	0.00%
SB124	1.057E-07	0.00%
SB125	4.978E+00	0.00%
SB126	7.656E-07	0.00%
SB126M	5.821E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.931E-03	0.00%
TE123M	1.149E-06	0.00%
TE124	1.623E-01	0.00%
TE125	9.123E+00	0.00%
TE125M	6.963E-02	0.00%
TE126	4.270E-01	0.00%
TE127	3.172E-06	0.00%
TE127M	9.062E-04	0.00%
TE128	6.672E+01	0.00%
TE129	1.480E-13	0.00%
TE129M	1.580E-10	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE127	3.596E-16	0.00%
XE128	1.201E+00	0.00%
XE129	4.292E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE131M	5.225E-29	0.00%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	2.026E+01	0.00%
CS135	2.810E+02	0.02%
CS136	2.821E-26	0.00%
CS137	7.071E+02	0.04%
BA132	5.832E-04	0.00%
BA134	5.244E+01	0.00%
BA135	7.446E-02	0.00%
BA136	1.051E+01	0.00%
BA136M	1.265E-33	0.00%
BA137	7.483E+01	0.00%
BA137M	1.082E-04	0.00%
BA138	8.205E+02	0.05%
BA140	2.600E-25	0.00%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
LA140	3.921E-26	0.00%
CE140	7.858E+02	0.05%
CE141	2.833E-09	0.00%
CE142	7.261E+02	0.04%
CE144	1.679E+01	0.00%
PR141	7.256E+02	0.04%

PR143	8.219E-24	0.00%
PR144	7.092E-04	0.00%
PR144M	3.545E-06	0.00%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.639E+02	0.04%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND147	8.266E-30	0.00%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	1.803E-03	0.00%
PM147	5.517E+01	0.00%
PM148	8.202E-11	0.00%
PM148M	1.120E-08	0.00%
SM146	2.071E-03	0.00%
SM147	1.168E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	1.241E+01	0.00%
SM152	8.712E+01	0.01%
SM154	2.113E+01	0.00%
EU150	1.505E-07	0.00%
EU151	3.034E-01	0.00%
EU152	4.209E-02	0.00%
EU153	6.491E+01	0.00%
EU154	1.138E+01	0.00%
EU155	4.160E+00	0.00%
EU156	2.313E-22	0.00%
GD152	2.509E+00	0.00%
GD153	8.456E-03	0.00%
GD154	3.212E+01	0.00%
GD155	5.064E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
TB160	1.149E-05	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	4.000E-04	0.00%
ER166	1.625E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.032E-09	0.00%
TM169	1.089E-05	0.00%
TM170	2.855E-09	0.00%
TM171	1.862E-08	0.00%
YB170	2.051E-06	0.00%
YB171	6.900E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
LU177	7.481E-11	0.00%
LU177M	7.516E-09	0.00%
HF174	3.676E-02	0.00%
HF175	5.402E-08	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%

HF180	1.699E+01	0.00%
HF181	6.389E-10	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	9.879E-06	0.00%
W180	1.491E-02	0.00%
W181	4.626E-07	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W185	1.610E-07	0.00%
W186	2.925E+00	0.00%
W188	3.147E-09	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
RE188	3.242E-11	0.00%
OS186	6.805E-03	0.00%
OS187	3.823E-11	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.807E-09	0.00%
IR191	4.336E-07	0.00%
IR192	2.321E-12	0.00%
IR193	1.310E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	1.918E-12	0.00%
TL206	4.895E-17	0.00%
TL207	7.948E-15	0.00%
TL208	5.612E-12	0.00%
TL209	2.382E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.261E-01	0.00%
PB209	9.927E-15	0.00%
PB210	6.399E-11	0.00%
PB211	6.149E-14	0.00%
PB212	3.310E-09	0.00%
PB214	2.342E-15	0.00%
BI208	2.760E-06	0.00%
BI209	4.000E-01	0.00%
BI210	3.939E-14	0.00%
BI210M	1.887E-05	0.00%
BI211	3.628E-15	0.00%
BI212	3.140E-10	0.00%
BI213	2.332E-15	0.00%
BI214	1.739E-15	0.00%
PO210	2.484E-08	0.00%
PO211	4.451E-20	0.00%
PO212	1.661E-20	0.00%
PO213	3.499E-24	0.00%
PO214	2.392E-22	0.00%
PO215	5.149E-20	0.00%
PO216	1.321E-14	0.00%
PO218	2.716E-16	0.00%
AT217	2.802E-20	0.00%
RN219	1.167E-16	0.00%
RN220	4.987E-12	0.00%
RN222	4.993E-13	0.00%
FR221	2.544E-16	0.00%
FR223	5.407E-16	0.00%
RA223	2.964E-11	0.00%
RA224	2.887E-08	0.00%
RA225	1.150E-12	0.00%
RA226	7.768E-08	0.00%
RA228	3.920E-14	0.00%

AC225	7.771E-13	0.00%
AC227	2.095E-08	0.00%
AC228	4.091E-18	0.00%
TH227	4.870E-11	0.00%
TH228	5.596E-06	0.00%
TH229	2.120E-07	0.00%
TH230	3.038E-03	0.00%
TH231	5.106E-08	0.00%
TH232	4.041E-04	0.00%
TH234	1.387E-05	0.00%
PA231	2.987E-04	0.00%
PA233	8.747E-06	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	3.609E-04	0.00%
U233	1.235E-03	0.00%
U234	1.954E+02	0.01%
U235	1.256E+04	0.73%
U236	3.056E+03	0.18%
U237	2.422E-05	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	2.332E-07	0.00%
NP236	1.650E-04	0.00%
NP237	2.575E+02	0.01%
NP238	2.071E-07	0.00%
NP239	2.366E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	1.666E-04	0.00%
PU237	2.755E-12	0.00%
PU238	5.893E+01	0.00%
PU239	4.345E+03	0.25%
PU240	1.354E+03	0.08%
PU241	7.821E+02	0.05%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	1.488E+02	0.01%
AM242	1.322E-05	0.00%
AM242M	1.105E+00	0.00%
AM243	2.752E+01	0.00%
CM241	1.752E-16	0.00%
CM242	5.970E-02	0.00%
CM243	1.103E-01	0.00%
CM244	4.474E+00	0.00%
CM245	1.343E-01	0.00%
CM246	8.210E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	1.055E-09	0.00%
CF250	1.600E-09	0.00%
TOTAL	*1.725E+06	99.96%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 5 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	4.267E-02	0.00%
HE 3	5.578E-03	0.00%
HE 4	1.751E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.101E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.879E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.939E-14	0.00%
P 33	1.963E-30	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 35	2.688E-10	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	3.021E-06	0.00%
AR 37	6.507E-22	0.00%
AR 38	8.095E-04	0.00%
AR 39	1.092E-06	0.00%
AR 40	1.425E-06	0.00%
K 39	1.791E-08	0.00%
K 40	3.251E-04	0.00%
K 41	6.443E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.005E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	7.243E-09	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%

SC 45	6.457E-05	0.00%
SC 46	2.022E-11	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 51	1.448E-21	0.00%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	4.799E-04	0.00%
MN 55	8.755E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	1.617E-01	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
FE 59	1.319E-15	0.00%
CO 58	1.572E-09	0.00%
CO 59	1.463E+02	0.01%
CO 60	2.062E+00	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.474E+01	0.00%
NI 60	4.331E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	2.729E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.413E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 65	5.446E-05	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.793E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	2.619E-04	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.859E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	1.157E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	7.000E+01	0.00%
RB 86	3.903E-32	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.390E-03	0.00%
SR 88	2.369E+02	0.01%

SR 89	2.933E-10	0.00%
SR 90	3.215E+02	0.02%
Y 89	3.100E+02	0.02%
Y 90	8.063E-02	0.00%
Y 91	1.379E-08	0.00%
ZR 90	2.655E+05	15.38%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.347E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 95	1.417E-07	0.00%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	1.491E-03	0.00%
NB 94	3.037E-01	0.00%
NB 95	1.729E-07	0.00%
NB 95M	5.927E-11	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.737E-04	0.00%
MO 94	9.098E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.141E+02	0.03%
RU 98	2.272E-14	0.00%
RU 99	1.063E-02	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU103	3.151E-13	0.00%
RU104	3.141E+02	0.02%
RU106	2.859E+00	0.00%
RH102	9.622E-05	0.00%
RH103	3.138E+02	0.02%
RH103M	2.818E-16	0.00%
RH106	2.687E-06	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.832E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.664E-02	0.00%
AG108	9.429E-13	0.00%
AG108M	2.987E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	2.481E-11	0.00%
AG110	3.062E-11	0.00%
AG110M	2.020E-03	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	2.512E-05	0.00%
CD110	1.526E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.471E-01	0.00%
CD113M	1.053E-01	0.00%
CD114	2.279E+01	0.00%
CD115M	2.073E-14	0.00%
CD116	6.653E+00	0.00%
IN113	9.427E-01	0.00%
IN113M	1.237E-09	0.00%
IN114	6.843E-19	0.00%
IN114M	4.254E-14	0.00%
IN115	2.030E+00	0.00%
IN115M	5.753E-21	0.00%

SN112	7.972E+01	0.00%
SN113	2.058E-06	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN117M	7.366E-41	0.00%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN119M	1.134E-02	0.00%
SN120	2.805E+03	0.16%
SN121M	1.475E-02	0.00%
SN122	4.091E+02	0.02%
SN123	1.815E-05	0.00%
SN124	5.042E+02	0.03%
SN126	1.611E+01	0.00%
SB121	7.445E+00	0.00%
SB123	6.276E+00	0.00%
SB124	2.350E-11	0.00%
SB125	3.018E+00	0.00%
SB126	7.656E-07	0.00%
SB126M	5.821E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE123M	1.670E-08	0.00%
TE124	1.623E-01	0.00%
TE125	1.111E+01	0.00%
TE125M	4.223E-02	0.00%
TE126	4.272E-01	0.00%
TE127	3.048E-08	0.00%
TE127M	8.706E-06	0.00%
TE128	6.672E+01	0.00%
TE129	4.220E-20	0.00%
TE129M	4.508E-17	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE127	3.285E-22	0.00%
XE128	1.201E+00	0.00%
XE129	4.303E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE131M	1.722E-47	0.00%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	1.035E+01	0.00%
CS135	2.810E+02	0.02%
CS136	4.638E-43	0.00%
CS137	6.752E+02	0.04%
BA132	5.832E-04	0.00%
BA134	6.236E+01	0.00%
BA135	7.464E-02	0.00%
BA136	1.051E+01	0.00%
BA136M	2.080E-50	0.00%
BA137	1.068E+02	0.01%
BA137M	1.033E-04	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE141	4.881E-16	0.00%
CE142	7.261E+02	0.04%
CE144	2.829E+00	0.00%
PR141	7.256E+02	0.04%
PR143	5.053E-40	0.00%
PR144	1.194E-04	0.00%
PR144M	5.970E-07	0.00%

ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.780E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND147	1.084E-49	0.00%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	1.401E-03	0.00%
PM147	3.253E+01	0.00%
PM148	3.881E-16	0.00%
PM148M	5.299E-14	0.00%
SM146	2.221E-03	0.00%
SM147	1.394E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	1.223E+01	0.00%
SM152	8.712E+01	0.01%
SM154	2.113E+01	0.00%
EU150	1.448E-07	0.00%
EU151	4.931E-01	0.00%
EU152	3.801E-02	0.00%
EU153	6.491E+01	0.00%
EU154	9.683E+00	0.00%
EU155	3.146E+00	0.00%
EU156	7.637E-37	0.00%
GD152	2.510E+00	0.00%
GD153	1.043E-03	0.00%
GD154	3.385E+01	0.00%
GD155	6.118E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
TB160	1.045E-08	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.996E-04	0.00%
ER166	1.625E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
TM170	5.564E-11	0.00%
TM171	9.043E-09	0.00%
YB170	2.054E-06	0.00%
YB171	7.860E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
LU177	2.853E-12	0.00%
LU177M	2.866E-10	0.00%
HF174	3.676E-02	0.00%
HF175	3.900E-11	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF181	4.155E-15	0.00%
HF182	1.400E-03	0.00%

TA181	4.056E-01	0.00%
TA182	1.210E-07	0.00%
W180	1.491E-02	0.00%
W181	7.087E-09	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W185	1.899E-10	0.00%
W186	2.925E+00	0.00%
W188	2.134E-12	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
RE188	2.198E-14	0.00%
OS186	6.805E-03	0.00%
OS187	5.686E-11	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.807E-09	0.00%
IR191	4.336E-07	0.00%
IR192	5.567E-14	0.00%
IR193	1.310E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	2.807E-12	0.00%
TL206	4.895E-17	0.00%
TL207	1.222E-14	0.00%
TL208	8.039E-12	0.00%
TL209	2.516E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.261E-01	0.00%
PB209	1.048E-14	0.00%
PB210	1.446E-10	0.00%
PB211	9.451E-14	0.00%
PB212	4.741E-09	0.00%
PB214	4.255E-15	0.00%
BI208	2.760E-06	0.00%
BI209	4.000E-01	0.00%
BI210	8.897E-14	0.00%
BI210M	1.887E-05	0.00%
BI211	5.578E-15	0.00%
BI212	4.498E-10	0.00%
BI213	2.463E-15	0.00%
BI214	3.160E-15	0.00%
PO210	6.425E-10	0.00%
PO211	6.844E-20	0.00%
PO212	2.379E-20	0.00%
PO213	3.695E-24	0.00%
PO214	4.347E-22	0.00%
PO215	7.916E-20	0.00%
PO216	1.892E-14	0.00%
PO218	4.934E-16	0.00%
AT217	2.959E-20	0.00%
RN219	1.794E-16	0.00%
RN220	7.143E-12	0.00%
RN222	9.072E-13	0.00%
FR221	2.688E-16	0.00%
FR223	8.314E-16	0.00%
RA223	4.557E-11	0.00%
RA224	4.137E-08	0.00%
RA225	1.215E-12	0.00%
RA226	1.412E-07	0.00%
RA228	7.537E-14	0.00%
AC225	8.207E-13	0.00%
AC227	3.222E-08	0.00%
AC228	7.868E-18	0.00%

TH227	7.487E-11	0.00%
TH228	8.024E-06	0.00%
TH229	2.239E-07	0.00%
TH230	4.132E-03	0.00%
TH231	5.106E-08	0.00%
TH232	5.822E-04	0.00%
TH234	1.387E-05	0.00%
PA231	3.238E-04	0.00%
PA233	8.766E-06	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	4.165E-04	0.00%
U233	1.408E-03	0.00%
U234	1.963E+02	0.01%
U235	1.256E+04	0.73%
U236	3.056E+03	0.18%
U237	2.199E-05	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	6.493E-08	0.00%
NP236	1.650E-04	0.00%
NP237	2.581E+02	0.01%
NP238	2.053E-07	0.00%
NP239	2.365E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	1.024E-04	0.00%
PU237	4.146E-17	0.00%
PU238	5.806E+01	0.00%
PU239	4.344E+03	0.25%
PU240	1.354E+03	0.08%
PU241	7.103E+02	0.04%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	2.200E+02	0.01%
AM242	1.310E-05	0.00%
AM242M	1.095E+00	0.00%
AM243	2.752E+01	0.00%
CM241	1.365E-22	0.00%
CM242	5.215E-03	0.00%
CM243	1.051E-01	0.00%
CM244	4.145E+00	0.00%
CM245	1.343E-01	0.00%
CM246	8.203E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	2.167E-10	0.00%
CF250	1.439E-09	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 10 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	3.223E-02	0.00%
HE 3	9.552E-03	0.00%
HE 4	1.866E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.100E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.853E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.924E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 35	1.522E-16	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	5.408E-06	0.00%
AR 37	1.308E-37	0.00%
AR 38	8.095E-04	0.00%
AR 39	1.078E-06	0.00%
AR 40	1.425E-06	0.00%
K 39	3.190E-08	0.00%
K 40	3.251E-04	0.00%
K 41	6.486E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.005E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	3.064E-12	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%

SC 46	5.561E-18	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 51	2.088E-41	0.00%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	8.355E-06	0.00%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	4.262E-02	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
FE 59	8.009E-28	0.00%
CO 58	2.684E-17	0.00%
CO 59	1.463E+02	0.01%
CO 60	1.068E+00	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.474E+01	0.00%
NI 60	4.332E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	2.628E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.423E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 65	3.032E-07	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.793E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	4.643E-04	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.859E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	8.374E+00	0.00%
KR 86	1.280E+02	0.01%
RB 85	7.319E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.390E-03	0.00%
SR 88	2.369E+02	0.01%
SR 89	3.806E-21	0.00%
SR 90	2.855E+02	0.02%

Y 89	3.100E+02	0.02%
Y 90	7.158E-02	0.00%
Y 91	5.535E-18	0.00%
ZR 90	2.655E+05	15.38%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.347E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 95	3.621E-16	0.00%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	2.362E-03	0.00%
NB 94	3.036E-01	0.00%
NB 95	4.416E-16	0.00%
NB 95M	1.515E-19	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.733E-04	0.00%
MO 94	9.098E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.141E+02	0.03%
RU 98	4.216E-14	0.00%
RU 99	1.900E-02	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU103	3.188E-27	0.00%
RU104	3.141E+02	0.02%
RU106	9.181E-02	0.00%
RH102	2.912E-05	0.00%
RH103	3.138E+02	0.02%
RH103M	2.851E-30	0.00%
RH106	8.630E-08	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.860E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.670E-02	0.00%
AG108	9.175E-13	0.00%
AG108M	2.906E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	1.621E-12	0.00%
AG110	1.932E-13	0.00%
AG110M	1.274E-05	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	1.641E-06	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.471E-01	0.00%
CD113M	8.300E-02	0.00%
CD114	2.279E+01	0.00%
CD115M	9.745E-27	0.00%
CD116	6.653E+00	0.00%
IN113	9.650E-01	0.00%
IN113M	2.070E-14	0.00%
IN114	5.397E-30	0.00%
IN114M	3.356E-25	0.00%
IN115	2.030E+00	0.00%
IN115M	2.705E-33	0.00%
SN112	7.972E+01	0.00%
SN113	3.447E-11	0.00%

SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN119M	6.469E-05	0.00%
SN120	2.805E+03	0.16%
SN121M	1.376E-02	0.00%
SN122	4.091E+02	0.02%
SN123	1.007E-09	0.00%
SN124	5.042E+02	0.03%
SN126	1.611E+01	0.00%
SB121	7.447E+00	0.00%
SB123	6.276E+00	0.00%
SB124	1.731E-20	0.00%
SB125	8.637E-01	0.00%
SB126	7.655E-07	0.00%
SB126M	5.821E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE123M	4.256E-13	0.00%
TE124	1.623E-01	0.00%
TE125	1.330E+01	0.00%
TE125M	1.208E-02	0.00%
TE126	4.279E-01	0.00%
TE127	2.758E-13	0.00%
TE127M	7.878E-11	0.00%
TE128	6.672E+01	0.00%
TE129	1.834E-36	0.00%
TE129M	1.959E-33	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE127	2.620E-37	0.00%
XE128	1.201E+00	0.00%
XE129	4.328E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	1.926E+00	0.00%
CS135	2.810E+02	0.02%
CS137	6.016E+02	0.03%
BA132	5.832E-04	0.00%
BA134	7.079E+01	0.00%
BA135	7.509E-02	0.00%
BA136	1.051E+01	0.00%
BA137	1.805E+02	0.01%
BA137M	9.203E-05	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE141	6.011E-33	0.00%
CE142	7.261E+02	0.04%
CE144	3.293E-02	0.00%
PR141	7.256E+02	0.04%
PR144	1.390E-06	0.00%
PR144M	6.951E-09	0.00%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.808E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%

PM146	7.462E-04	0.00%
PM147	8.680E+00	0.00%
PM148	1.890E-29	0.00%
PM148M	2.581E-27	0.00%
SM146	2.467E-03	0.00%
SM147	1.634E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	1.176E+01	0.00%
SM152	8.713E+01	0.01%
SM154	2.113E+01	0.00%
EU150	1.315E-07	0.00%
EU151	9.550E-01	0.00%
EU152	2.946E-02	0.00%
EU153	6.491E+01	0.00%
EU154	6.470E+00	0.00%
EU155	1.564E+00	0.00%
GD152	2.513E+00	0.00%
GD153	5.583E-06	0.00%
GD154	3.714E+01	0.00%
GD155	7.745E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
TB160	2.604E-16	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.984E-04	0.00%
ER166	1.625E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
TM170	2.952E-15	0.00%
TM171	1.487E-09	0.00%
YB170	2.054E-06	0.00%
YB171	8.612E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
LU177	8.099E-16	0.00%
LU177M	8.136E-14	0.00%
HF174	3.676E-02	0.00%
HF175	5.463E-19	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF181	4.480E-28	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	5.096E-11	0.00%
W180	1.491E-02	0.00%
W181	2.060E-13	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W185	9.083E-18	0.00%
W186	2.925E+00	0.00%

W188	2.555E-20	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
RE188	2.632E-22	0.00%
OS186	6.805E-03	0.00%
OS187	1.035E-10	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.807E-09	0.00%
IR191	4.336E-07	0.00%
IR192	5.248E-14	0.00%
IR193	1.311E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	5.028E-12	0.00%
TL206	4.895E-17	0.00%
TL207	2.340E-14	0.00%
TL208	1.125E-11	0.00%
TL209	2.918E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.261E-01	0.00%
PB209	1.216E-14	0.00%
PB210	6.001E-10	0.00%
PB211	1.810E-13	0.00%
PB212	6.638E-09	0.00%
PB214	1.159E-14	0.00%
BI208	2.760E-06	0.00%
BI209	4.000E-01	0.00%
BI210	3.693E-13	0.00%
BI210M	1.887E-05	0.00%
BI211	1.068E-14	0.00%
BI212	6.297E-10	0.00%
BI213	2.857E-15	0.00%
BI214	8.603E-15	0.00%
PO210	1.028E-11	0.00%
PO211	1.311E-19	0.00%
PO212	3.332E-20	0.00%
PO213	4.287E-24	0.00%
PO214	1.184E-21	0.00%
PO215	1.516E-19	0.00%
PO216	2.649E-14	0.00%
PO218	1.344E-15	0.00%
AT217	3.433E-20	0.00%
RN219	3.435E-16	0.00%
RN220	9.999E-12	0.00%
RN222	2.470E-12	0.00%
FR221	3.117E-16	0.00%
FR223	1.593E-15	0.00%
RA223	8.725E-11	0.00%
RA224	5.791E-08	0.00%
RA225	1.409E-12	0.00%
RA226	3.843E-07	0.00%
RA228	2.009E-13	0.00%
AC225	9.518E-13	0.00%
AC227	6.171E-08	0.00%
AC228	2.097E-17	0.00%
TH227	1.434E-10	0.00%
TH228	1.124E-05	0.00%
TH229	2.598E-07	0.00%
TH230	6.885E-03	0.00%
TH231	5.107E-08	0.00%
TH232	1.027E-03	0.00%
TH234	1.387E-05	0.00%
PA231	3.860E-04	0.00%
PA233	8.846E-06	0.00%

PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	4.657E-04	0.00%
U233	1.821E-03	0.00%
U234	1.986E+02	0.01%
U235	1.256E+04	0.73%
U236	3.057E+03	0.18%
U237	1.729E-05	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	2.657E-09	0.00%
NP236	1.650E-04	0.00%
NP237	2.605E+02	0.02%
NP238	2.007E-07	0.00%
NP239	2.364E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	3.037E-05	0.00%
PU237	3.644E-29	0.00%
PU238	5.583E+01	0.00%
PU239	4.344E+03	0.25%
PU240	1.354E+03	0.08%
PU241	5.583E+02	0.03%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	3.696E+02	0.02%
AM242	1.280E-05	0.00%
AM242M	1.070E+00	0.00%
AM243	2.750E+01	0.00%
CM241	7.314E-38	0.00%
CM242	2.591E-03	0.00%
CM243	9.305E-02	0.00%
CM244	3.422E+00	0.00%
CM245	1.343E-01	0.00%
CM246	8.196E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	4.150E-12	0.00%
CF250	1.104E-09	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 15 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	2.434E-02	0.00%
HE 3	1.255E-02	0.00%
HE 4	1.993E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.098E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.827E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.908E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 35	8.611E-23	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	7.794E-06	0.00%
AR 37	2.627E-53	0.00%
AR 38	8.095E-04	0.00%
AR 39	1.065E-06	0.00%
AR 40	1.425E-06	0.00%
K 39	4.571E-08	0.00%
K 40	3.251E-04	0.00%
K 41	6.530E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.005E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	1.296E-15	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%

SC 46	1.529E-24	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 51	3.013E-61	0.00%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	1.454E-07	0.00%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	1.124E-02	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
FE 59	4.861E-40	0.00%
CO 58	4.583E-25	0.00%
CO 59	1.463E+02	0.01%
CO 60	5.535E-01	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.474E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	2.530E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.433E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 65	1.688E-09	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.792E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	6.666E-04	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.859E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	6.061E+00	0.00%
KR 86	1.280E+02	0.01%
RB 85	7.551E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.390E-03	0.00%
SR 88	2.369E+02	0.01%
SR 89	4.941E-32	0.00%
SR 90	2.535E+02	0.01%

Y 89	3.100E+02	0.02%
Y 90	6.355E-02	0.00%
Y 91	2.221E-27	0.00%
ZR 90	2.655E+05	15.38%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.347E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 95	9.255E-25	0.00%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	3.036E-03	0.00%
NB 94	3.036E-01	0.00%
NB 95	1.129E-24	0.00%
NB 95M	3.872E-28	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.730E-04	0.00%
MO 94	9.099E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.141E+02	0.03%
RU 98	6.161E-14	0.00%
RU 99	2.736E-02	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU103	3.225E-41	0.00%
RU104	3.141E+02	0.02%
RU106	2.950E-03	0.00%
RH102	8.814E-06	0.00%
RH103	3.138E+02	0.02%
RH103M	2.884E-44	0.00%
RH106	2.772E-09	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.676E-02	0.00%
AG108	8.929E-13	0.00%
AG108M	2.828E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	1.059E-13	0.00%
AG110	1.218E-15	0.00%
AG110M	8.042E-08	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	1.072E-07	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.471E-01	0.00%
CD113M	6.545E-02	0.00%
CD114	2.279E+01	0.00%
CD115M	4.582E-39	0.00%
CD116	6.653E+00	0.00%
IN113	9.828E-01	0.00%
IN113M	3.466E-19	0.00%
IN114	4.257E-41	0.00%
IN114M	2.647E-36	0.00%
IN115	2.030E+00	0.00%
IN115M	1.272E-45	0.00%
SN112	7.972E+01	0.00%
SN113	5.770E-16	0.00%

SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN119M	3.691E-07	0.00%
SN120	2.805E+03	0.16%
SN121M	1.283E-02	0.00%
SN122	4.091E+02	0.02%
SN123	5.578E-14	0.00%
SN124	5.042E+02	0.03%
SN126	1.611E+01	0.00%
SB121	7.448E+00	0.00%
SB123	6.276E+00	0.00%
SB124	1.276E-29	0.00%
SB125	2.471E-01	0.00%
SB126	7.655E-07	0.00%
SB126M	5.820E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE123M	1.085E-17	0.00%
TE124	1.623E-01	0.00%
TE125	1.392E+01	0.00%
TE125M	3.457E-03	0.00%
TE126	4.283E-01	0.00%
TE127	2.496E-18	0.00%
TE127M	7.128E-16	0.00%
TE128	6.672E+01	0.00%
TE129	7.968E-53	0.00%
TE129M	8.509E-50	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE127	2.090E-52	0.00%
XE128	1.201E+00	0.00%
XE129	4.353E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	3.587E-01	0.00%
CS135	2.810E+02	0.02%
CS137	5.359E+02	0.03%
BA132	5.832E-04	0.00%
BA134	7.235E+01	0.00%
BA135	7.554E-02	0.00%
BA136	1.051E+01	0.00%
BA137	2.462E+02	0.01%
BA137M	8.199E-05	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
CE144	3.833E-04	0.00%
PR141	7.256E+02	0.04%
PR144	1.618E-08	0.00%
PR144M	8.091E-11	0.00%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	3.973E-04	0.00%

PM147	2.316E+00	0.00%
PM148	9.204E-43	0.00%
PM148M	1.256E-40	0.00%
SM146	2.597E-03	0.00%
SM147	1.697E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	1.132E+01	0.00%
SM152	8.713E+01	0.01%
SM154	2.113E+01	0.00%
EU150	1.195E-07	0.00%
EU151	1.399E+00	0.00%
EU152	2.283E-02	0.00%
EU153	6.491E+01	0.00%
EU154	4.324E+00	0.00%
EU155	7.776E-01	0.00%
GD152	2.515E+00	0.00%
GD153	2.988E-08	0.00%
GD154	3.932E+01	0.00%
GD155	8.549E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
TB160	6.489E-24	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.974E-04	0.00%
ER166	1.625E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
TM170	1.566E-19	0.00%
TM171	2.446E-10	0.00%
YB170	2.054E-06	0.00%
YB171	8.742E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
LU177	2.300E-19	0.00%
LU177M	2.310E-17	0.00%
HF174	3.676E-02	0.00%
HF175	7.652E-27	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF181	4.832E-41	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.896E-11	0.00%
W180	1.491E-02	0.00%
W181	5.986E-18	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W185	4.344E-25	0.00%
W186	2.925E+00	0.00%
W188	3.060E-28	0.00%

RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
RE188	3.151E-30	0.00%
OS186	6.805E-03	0.00%
OS187	1.500E-10	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.807E-09	0.00%
IR191	4.336E-07	0.00%
IR192	5.173E-14	0.00%
IR193	1.311E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	7.249E-12	0.00%
TL206	4.895E-17	0.00%
TL207	3.521E-14	0.00%
TL208	1.205E-11	0.00%
TL209	3.418E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.262E-01	0.00%
PB209	1.425E-14	0.00%
PB210	1.558E-09	0.00%
PB211	2.724E-13	0.00%
PB212	7.104E-09	0.00%
PB214	2.259E-14	0.00%
BI208	2.760E-06	0.00%
BI209	4.000E-01	0.00%
BI210	9.593E-13	0.00%
BI210M	1.887E-05	0.00%
BI211	1.607E-14	0.00%
BI212	6.739E-10	0.00%
BI213	3.347E-15	0.00%
BI214	1.677E-14	0.00%
PO210	2.650E-11	0.00%
PO211	1.972E-19	0.00%
PO212	3.565E-20	0.00%
PO213	5.021E-24	0.00%
PO214	2.307E-21	0.00%
PO215	2.280E-19	0.00%
PO216	2.835E-14	0.00%
PO218	2.619E-15	0.00%
AT217	4.020E-20	0.00%
RN219	5.168E-16	0.00%
RN220	1.070E-11	0.00%
RN222	4.816E-12	0.00%
FR221	3.651E-16	0.00%
FR223	2.395E-15	0.00%
RA223	1.313E-10	0.00%
RA224	6.197E-08	0.00%
RA225	1.651E-12	0.00%
RA226	7.491E-07	0.00%
RA228	3.599E-13	0.00%
AC225	1.115E-12	0.00%
AC227	9.283E-08	0.00%
AC228	3.756E-17	0.00%
TH227	2.157E-10	0.00%
TH228	1.203E-05	0.00%
TH229	3.042E-07	0.00%
TH230	9.667E-03	0.00%
TH231	5.107E-08	0.00%
TH232	1.472E-03	0.00%
TH234	1.387E-05	0.00%
PA231	4.477E-04	0.00%
PA233	8.963E-06	0.00%
PA234	2.088E-10	0.00%

PA234M	4.675E-10	0.00%
U232	4.642E-04	0.00%
U233	2.238E-03	0.00%
U234	2.008E+02	0.01%
U235	1.256E+04	0.73%
U236	3.058E+03	0.18%
U237	1.359E-05	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	1.088E-10	0.00%
NP236	1.650E-04	0.00%
NP237	2.639E+02	0.02%
NP238	1.961E-07	0.00%
NP239	2.363E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	9.009E-06	0.00%
PU237	3.202E-41	0.00%
PU238	5.370E+01	0.00%
PU239	4.343E+03	0.25%
PU240	1.354E+03	0.08%
PU241	4.389E+02	0.03%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	4.855E+02	0.03%
AM242	1.251E-05	0.00%
AM242M	1.046E+00	0.00%
AM243	2.749E+01	0.00%
CM241	3.919E-53	0.00%
CM242	2.531E-03	0.00%
CM243	8.241E-02	0.00%
CM244	2.826E+00	0.00%
CM245	1.342E-01	0.00%
CM246	8.195E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	7.944E-14	0.00%
CF250	8.470E-10	0.00%
TOTAL	*1.725E+06	99.96%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 20 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	1.839E-02	0.00%
HE 3	1.482E-02	0.00%
HE 4	2.131E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.097E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.802E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.892E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 35	4.874E-29	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.018E-05	0.00%
AR 37	5.279E-69	0.00%
AR 38	8.095E-04	0.00%
AR 39	1.051E-06	0.00%
AR 40	1.425E-06	0.00%
K 39	5.933E-08	0.00%
K 40	3.251E-04	0.00%
K 41	6.573E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.005E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	5.487E-19	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%

SC 46	4.206E-31	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 51	4.347E-81	0.00%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	2.532E-09	0.00%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	2.963E-03	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
FE 59	2.951E-52	0.00%
CO 58	7.827E-33	0.00%
CO 59	1.463E+02	0.01%
CO 60	2.868E-01	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.474E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	2.437E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.442E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 65	9.399E-12	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.792E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	8.690E-04	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.859E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	4.387E+00	0.00%
KR 86	1.280E+02	0.01%
RB 85	7.718E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.390E-03	0.00%
SR 88	2.369E+02	0.01%
SR 89	6.413E-43	0.00%
SR 90	2.250E+02	0.01%

Y 89	3.100E+02	0.02%
Y 90	5.642E-02	0.00%
Y 91	8.917E-37	0.00%
ZR 90	2.656E+05	15.39%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.347E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 95	2.366E-33	0.00%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	3.559E-03	0.00%
NB 94	3.035E-01	0.00%
NB 95	2.886E-33	0.00%
NB 95M	9.900E-37	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.726E-04	0.00%
MO 94	9.099E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.141E+02	0.03%
RU 98	8.106E-14	0.00%
RU 99	3.573E-02	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU103	3.262E-55	0.00%
RU104	3.141E+02	0.02%
RU106	9.473E-05	0.00%
RH102	2.668E-06	0.00%
RH103	3.138E+02	0.02%
RH103M	2.918E-58	0.00%
RH106	8.905E-11	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.682E-02	0.00%
AG108	8.688E-13	0.00%
AG108M	2.752E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	6.922E-15	0.00%
AG110	7.689E-18	0.00%
AG110M	5.073E-10	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	7.008E-09	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD113M	5.161E-02	0.00%
CD114	2.279E+01	0.00%
CD115M	2.155E-51	0.00%
CD116	6.653E+00	0.00%
IN113	9.961E-01	0.00%
IN113M	5.802E-24	0.00%
IN114	3.358E-52	0.00%
IN114M	2.087E-47	0.00%
IN115	2.030E+00	0.00%
IN115M	5.978E-58	0.00%
SN112	7.972E+01	0.00%
SN113	9.662E-21	0.00%

SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN119M	2.106E-09	0.00%
SN120	2.805E+03	0.16%
SN121M	1.198E-02	0.00%
SN122	4.091E+02	0.02%
SN123	3.092E-18	0.00%
SN124	5.042E+02	0.03%
SN126	1.611E+01	0.00%
SB121	7.449E+00	0.00%
SB123	6.276E+00	0.00%
SB124	9.399E-39	0.00%
SB125	7.073E-02	0.00%
SB126	7.655E-07	0.00%
SB126M	5.820E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE123M	2.764E-22	0.00%
TE124	1.623E-01	0.00%
TE125	1.411E+01	0.00%
TE125M	9.888E-04	0.00%
TE126	4.290E-01	0.00%
TE127	2.258E-23	0.00%
TE127M	6.450E-21	0.00%
TE128	6.672E+01	0.00%
TE129	3.462E-69	0.00%
TE129M	3.697E-66	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE127	1.667E-67	0.00%
XE128	1.201E+00	0.00%
XE129	4.378E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	6.680E-02	0.00%
CS135	2.810E+02	0.02%
CS137	4.775E+02	0.03%
BA132	5.832E-04	0.00%
BA134	7.265E+01	0.00%
BA135	7.600E-02	0.00%
BA136	1.051E+01	0.00%
BA137	3.046E+02	0.02%
BA137M	7.304E-05	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
CE144	4.463E-06	0.00%
PR141	7.256E+02	0.04%
PR144	1.884E-10	0.00%
PR144M	9.419E-13	0.00%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	2.116E-04	0.00%

PM147	6.180E-01	0.00%
PM148	4.482E-56	0.00%
PM148M	6.120E-54	0.00%
SM146	2.667E-03	0.00%
SM147	1.714E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	1.089E+01	0.00%
SM152	8.713E+01	0.01%
SM154	2.113E+01	0.00%
EU150	1.085E-07	0.00%
EU151	1.826E+00	0.00%
EU152	1.769E-02	0.00%
EU153	6.491E+01	0.00%
EU154	2.890E+00	0.00%
EU155	3.865E-01	0.00%
GD152	2.516E+00	0.00%
GD153	1.599E-10	0.00%
GD154	4.078E+01	0.00%
GD155	8.947E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
TB160	1.617E-31	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.962E-04	0.00%
ER166	1.625E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
TM170	8.306E-24	0.00%
TM171	4.022E-11	0.00%
YB170	2.054E-06	0.00%
YB171	8.759E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
LU177	6.528E-23	0.00%
LU177M	6.559E-21	0.00%
HF174	3.676E-02	0.00%
HF175	1.072E-34	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF181	5.211E-54	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.896E-11	0.00%
W180	1.491E-02	0.00%
W181	1.740E-22	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W185	2.078E-32	0.00%
W186	2.925E+00	0.00%
W188	3.664E-36	0.00%

RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
RE188	3.774E-38	0.00%
OS186	6.805E-03	0.00%
OS187	1.966E-10	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.807E-09	0.00%
IR191	4.336E-07	0.00%
IR192	5.099E-14	0.00%
IR193	1.312E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	9.471E-12	0.00%
TL206	4.895E-17	0.00%
TL207	4.752E-14	0.00%
TL208	1.191E-11	0.00%
TL209	4.017E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.262E-01	0.00%
PB209	1.674E-14	0.00%
PB210	3.175E-09	0.00%
PB211	3.676E-13	0.00%
PB212	7.025E-09	0.00%
PB214	3.729E-14	0.00%
BI208	2.760E-06	0.00%
BI209	4.000E-01	0.00%
BI210	1.955E-12	0.00%
BI210M	1.887E-05	0.00%
BI211	2.169E-14	0.00%
BI212	6.664E-10	0.00%
BI213	3.933E-15	0.00%
BI214	2.769E-14	0.00%
PO210	5.400E-11	0.00%
PO211	2.662E-19	0.00%
PO212	3.526E-20	0.00%
PO213	5.900E-24	0.00%
PO214	3.809E-21	0.00%
PO215	3.079E-19	0.00%
PO216	2.804E-14	0.00%
PO218	4.324E-15	0.00%
AT217	4.725E-20	0.00%
RN219	6.976E-16	0.00%
RN220	1.058E-11	0.00%
RN222	7.949E-12	0.00%
FR221	4.291E-16	0.00%
FR223	3.233E-15	0.00%
RA223	1.772E-10	0.00%
RA224	6.128E-08	0.00%
RA225	1.940E-12	0.00%
RA226	1.236E-06	0.00%
RA228	5.388E-13	0.00%
AC225	1.310E-12	0.00%
AC227	1.253E-07	0.00%
AC228	5.624E-17	0.00%
TH227	2.912E-10	0.00%
TH228	1.190E-05	0.00%
TH229	3.575E-07	0.00%
TH230	1.248E-02	0.00%
TH231	5.107E-08	0.00%
TH232	1.917E-03	0.00%
TH234	1.387E-05	0.00%
PA231	5.092E-04	0.00%
PA233	9.106E-06	0.00%
PA234	2.088E-10	0.00%

PA234M	4.675E-10	0.00%
U232	4.485E-04	0.00%
U233	2.661E-03	0.00%
U234	2.029E+02	0.01%
U235	1.256E+04	0.73%
U236	3.059E+03	0.18%
U237	1.068E-05	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	4.449E-12	0.00%
NP236	1.650E-04	0.00%
NP237	2.681E+02	0.02%
NP238	1.917E-07	0.00%
NP239	2.361E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	2.671E-06	0.00%
PU237	2.815E-53	0.00%
PU238	5.164E+01	0.00%
PU239	4.342E+03	0.25%
PU240	1.354E+03	0.08%
PU241	3.450E+02	0.02%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	5.752E+02	0.03%
AM242	1.223E-05	0.00%
AM242M	1.022E+00	0.00%
AM243	2.748E+01	0.00%
CM241	2.100E-68	0.00%
CM242	2.474E-03	0.00%
CM243	7.297E-02	0.00%
CM244	2.334E+00	0.00%
CM245	1.341E-01	0.00%
CM246	8.188E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	1.522E-15	0.00%
CF250	6.499E-10	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 30 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	1.049E-02	0.00%
HE 3	1.783E-02	0.00%
HE 4	2.428E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.094E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.750E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.861E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 35	1.561E-41	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.495E-05	0.00%
AR 38	8.095E-04	0.00%
AR 39	1.025E-06	0.00%
AR 40	1.425E-06	0.00%
K 39	8.607E-08	0.00%
K 40	3.251E-04	0.00%
K 41	6.659E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.005E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	9.826E-26	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
SC 46	3.181E-44	0.00%

TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	7.675E-13	0.00%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	2.060E-04	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 58	2.283E-48	0.00%
CO 59	1.463E+02	0.01%
CO 60	7.695E-02	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.474E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	2.260E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.460E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 65	2.913E-16	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.792E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	1.274E-03	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.859E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	2.298E+00	0.00%
KR 86	1.280E+02	0.01%
RB 85	7.927E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.390E-03	0.00%
SR 88	2.369E+02	0.01%
SR 90	1.773E+02	0.01%
Y 89	3.100E+02	0.02%
Y 90	4.447E-02	0.00%
Y 91	1.436E-55	0.00%
ZR 90	2.656E+05	15.39%

ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.347E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 95	1.546E-50	0.00%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	4.278E-03	0.00%
NB 94	3.034E-01	0.00%
NB 95	1.886E-50	0.00%
NB 95M	6.467E-54	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.719E-04	0.00%
MO 94	9.100E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.141E+02	0.03%
RU 98	1.199E-13	0.00%
RU 99	5.246E-02	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RU106	9.774E-08	0.00%
RH102	2.444E-07	0.00%
RH103	3.138E+02	0.02%
RH106	9.188E-14	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.695E-02	0.00%
AG108	8.227E-13	0.00%
AG108M	2.605E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	2.955E-17	0.00%
AG110	3.060E-22	0.00%
AG110M	2.019E-14	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	2.992E-11	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD113M	3.209E-02	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.016E+00	0.00%
IN113M	1.627E-33	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN113	2.708E-30	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN119M	6.856E-14	0.00%
SN120	2.805E+03	0.16%
SN121M	1.043E-02	0.00%
SN122	4.091E+02	0.02%

SN123	9.505E-27	0.00%
SN124	5.042E+02	0.03%
SN126	1.611E+01	0.00%
SB121	7.450E+00	0.00%
SB123	6.276E+00	0.00%
SB124	5.103E-57	0.00%
SB125	5.791E-03	0.00%
SB126	7.654E-07	0.00%
SB126M	5.820E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE123M	1.795E-31	0.00%
TE124	1.623E-01	0.00%
TE125	1.417E+01	0.00%
TE125M	8.100E-05	0.00%
TE126	4.301E-01	0.00%
TE127	1.849E-33	0.00%
TE127M	5.281E-31	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE128	1.201E+00	0.00%
XE129	4.429E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	2.316E-03	0.00%
CS135	2.810E+02	0.02%
CS137	3.790E+02	0.02%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	7.689E-02	0.00%
BA136	1.051E+01	0.00%
BA137	4.031E+02	0.02%
BA137M	5.798E-05	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
CE144	6.048E-10	0.00%
PR141	7.256E+02	0.04%
PR144	2.554E-14	0.00%
PR144M	1.276E-16	0.00%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	6.000E-05	0.00%
PM147	4.401E-02	0.00%
SM146	2.723E-03	0.00%
SM147	1.720E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	1.008E+01	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU150	8.946E-08	0.00%
EU151	2.634E+00	0.00%
EU152	1.063E-02	0.00%
EU153	6.491E+01	0.00%

EU154	1.291E+00	0.00%
EU155	9.555E-02	0.00%
GD152	2.518E+00	0.00%
GD153	4.577E-15	0.00%
GD154	4.241E+01	0.00%
GD155	9.243E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
TB160	1.004E-46	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.938E-04	0.00%
ER166	1.625E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
TM170	2.337E-32	0.00%
TM171	1.088E-12	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
LU177	5.262E-30	0.00%
LU177M	5.287E-28	0.00%
HF174	3.676E-02	0.00%
HF175	2.103E-50	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.895E-11	0.00%
W180	1.491E-02	0.00%
W181	1.470E-31	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W185	4.753E-47	0.00%
W186	2.925E+00	0.00%
W188	5.253E-52	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
RE188	5.410E-54	0.00%
OS186	6.805E-03	0.00%
OS187	2.897E-10	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.807E-09	0.00%
IR191	4.336E-07	0.00%
IR192	4.954E-14	0.00%
IR193	1.312E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	1.392E-11	0.00%
TL206	4.895E-17	0.00%

TL207	7.332E-14	0.00%
TL208	1.098E-11	0.00%
TL209	5.519E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.262E-01	0.00%
PB209	2.300E-14	0.00%
PB210	8.908E-09	0.00%
PB211	5.672E-13	0.00%
PB212	6.475E-09	0.00%
PB214	7.792E-14	0.00%
BI208	2.759E-06	0.00%
BI209	4.000E-01	0.00%
BI210	5.482E-12	0.00%
BI210M	1.887E-05	0.00%
BI211	3.347E-14	0.00%
BI212	6.142E-10	0.00%
BI213	5.403E-15	0.00%
BI214	5.785E-14	0.00%
PO210	1.514E-10	0.00%
PO211	4.106E-19	0.00%
PO212	3.250E-20	0.00%
PO213	8.106E-24	0.00%
PO214	7.960E-21	0.00%
PO215	4.750E-19	0.00%
PO216	2.584E-14	0.00%
PO218	9.034E-15	0.00%
AT217	6.492E-20	0.00%
RN219	1.076E-15	0.00%
RN220	9.757E-12	0.00%
RN222	1.661E-11	0.00%
FR221	5.895E-16	0.00%
FR223	4.991E-15	0.00%
RA223	2.734E-10	0.00%
RA224	5.649E-08	0.00%
RA225	2.665E-12	0.00%
RA226	2.584E-06	0.00%
RA228	9.278E-13	0.00%
AC225	1.801E-12	0.00%
AC227	1.933E-07	0.00%
AC228	9.686E-17	0.00%
TH227	4.493E-10	0.00%
TH228	1.097E-05	0.00%
TH229	4.912E-07	0.00%
TH230	1.819E-02	0.00%
TH231	5.108E-08	0.00%
TH232	2.807E-03	0.00%
TH234	1.387E-05	0.00%
PA231	6.317E-04	0.00%
PA233	9.451E-06	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	4.096E-04	0.00%
U233	3.531E-03	0.00%
U234	2.068E+02	0.01%
U235	1.256E+04	0.73%
U236	3.060E+03	0.18%
U237	6.601E-06	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	7.451E-15	0.00%
NP236	1.649E-04	0.00%
NP237	2.782E+02	0.02%
NP238	1.832E-07	0.00%
NP239	2.359E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	2.351E-07	0.00%

PU238	4.775E+01	0.00%
PU239	4.341E+03	0.25%
PU240	1.354E+03	0.08%
PU241	2.132E+02	0.01%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	6.967E+02	0.04%
AM242	1.169E-05	0.00%
AM242M	9.767E-01	0.00%
AM243	2.745E+01	0.00%
CM242	2.363E-03	0.00%
CM243	5.722E-02	0.00%
CM244	1.592E+00	0.00%
CM245	1.340E-01	0.00%
CM246	8.174E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	5.579E-19	0.00%
CF250	3.826E-10	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 50 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	3.413E-03	0.00%
HE 3	2.052E-02	0.00%
HE 4	3.060E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.090E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.650E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.801E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.450E-05	0.00%
AR 38	8.095E-04	0.00%
AR 39	9.732E-07	0.00%
AR 40	1.425E-06	0.00%
K 39	1.376E-07	0.00%
K 40	3.251E-04	0.00%
K 41	6.832E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.005E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 45	3.150E-39	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%

TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	7.050E-20	0.00%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	9.965E-07	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.463E+02	0.01%
CO 60	5.543E-03	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.474E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	1.944E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.492E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 65	2.799E-25	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.791E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	2.082E-03	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.852E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	6.305E-01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.093E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.390E-03	0.00%
SR 88	2.369E+02	0.01%
SR 90	1.102E+02	0.01%
Y 89	3.100E+02	0.02%
Y 90	2.763E-02	0.00%
ZR 90	2.657E+05	15.39%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.346E+02	0.04%
ZR 94	9.416E+04	5.46%

ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	4.969E-03	0.00%
NB 94	3.032E-01	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.704E-04	0.00%
MO 94	9.103E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.141E+02	0.03%
RU 98	1.977E-13	0.00%
RU 99	8.592E-02	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RU106	1.040E-13	0.00%
RH102	2.052E-09	0.00%
RH103	3.138E+02	0.02%
RH106	9.783E-20	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.720E-02	0.00%
AG108	7.377E-13	0.00%
AG108M	2.336E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	5.387E-22	0.00%
AG110	4.848E-31	0.00%
AG110M	3.199E-23	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	5.454E-16	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD113M	1.241E-02	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.035E+00	0.00%
IN113M	1.278E-52	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN113	2.129E-49	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN119M	7.267E-23	0.00%
SN120	2.805E+03	0.16%
SN121M	7.898E-03	0.00%
SN122	4.091E+02	0.02%
SN123	8.980E-44	0.00%
SN124	5.042E+02	0.03%
SN126	1.611E+01	0.00%
SB121	7.453E+00	0.00%
SB123	6.276E+00	0.00%
SB125	3.883E-05	0.00%
SB126	7.653E-07	0.00%

SB126M	5.819E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE123M	7.575E-50	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE125M	5.431E-07	0.00%
TE126	4.323E-01	0.00%
TE127	1.239E-53	0.00%
TE127M	3.540E-51	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE128	1.201E+00	0.00%
XE129	4.529E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	2.786E-06	0.00%
CS135	2.810E+02	0.02%
CS137	2.388E+02	0.01%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	7.868E-02	0.00%
BA136	1.051E+01	0.00%
BA137	5.434E+02	0.03%
BA137M	3.652E-05	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
CE144	1.111E-17	0.00%
PR141	7.256E+02	0.04%
PR144	4.690E-22	0.00%
PR144M	2.344E-24	0.00%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	4.826E-06	0.00%
PM147	2.232E-04	0.00%
SM146	2.743E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	8.643E+00	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU150	6.089E-08	0.00%
EU151	4.074E+00	0.00%
EU152	3.836E-03	0.00%
EU153	6.491E+01	0.00%
EU154	2.575E-01	0.00%
EU155	5.837E-03	0.00%
GD152	2.521E+00	0.00%
GD153	3.752E-24	0.00%
GD154	4.346E+01	0.00%
GD155	9.335E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%

GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.893E-04	0.00%
ER166	1.625E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
TM170	1.851E-49	0.00%
TM171	7.958E-16	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
LU177	3.420E-44	0.00%
LU177M	3.435E-42	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.895E-11	0.00%
W180	1.491E-02	0.00%
W181	1.048E-49	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	4.760E-10	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.807E-09	0.00%
IR191	4.336E-07	0.00%
IR192	4.677E-14	0.00%
IR193	1.313E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	2.280E-11	0.00%
TL206	4.895E-17	0.00%
TL207	1.282E-13	0.00%
TL208	9.080E-12	0.00%
TL209	9.812E-18	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.263E-01	0.00%
PB209	4.087E-14	0.00%
PB210	3.316E-08	0.00%
PB211	9.913E-13	0.00%
PB212	5.354E-09	0.00%
PB214	2.049E-13	0.00%

BI208	2.759E-06	0.00%
BI209	4.000E-01	0.00%
BI210	2.040E-11	0.00%
BI210M	1.887E-05	0.00%
BI211	5.851E-14	0.00%
BI212	5.079E-10	0.00%
BI213	9.606E-15	0.00%
BI214	1.521E-13	0.00%
PO210	5.636E-10	0.00%
PO211	7.179E-19	0.00%
PO212	2.687E-20	0.00%
PO213	1.441E-23	0.00%
PO214	2.092E-20	0.00%
PO215	8.304E-19	0.00%
PO216	2.136E-14	0.00%
PO218	2.375E-14	0.00%
AT217	1.154E-19	0.00%
RN219	1.882E-15	0.00%
RN220	8.066E-12	0.00%
RN222	4.367E-11	0.00%
FR221	1.048E-15	0.00%
FR223	8.728E-15	0.00%
RA223	4.780E-10	0.00%
RA224	4.671E-08	0.00%
RA225	4.737E-12	0.00%
RA226	6.794E-06	0.00%
RA228	1.749E-12	0.00%
AC225	3.200E-12	0.00%
AC227	3.382E-07	0.00%
AC228	1.826E-16	0.00%
TH227	7.855E-10	0.00%
TH228	9.073E-06	0.00%
TH229	8.730E-07	0.00%
TH230	2.991E-02	0.00%
TH231	5.109E-08	0.00%
TH232	4.589E-03	0.00%
TH234	1.387E-05	0.00%
PA231	8.756E-04	0.00%
PA233	1.027E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	3.381E-04	0.00%
U233	5.377E-03	0.00%
U234	2.139E+02	0.01%
U235	1.256E+04	0.73%
U236	3.062E+03	0.18%
U237	2.520E-06	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	2.090E-20	0.00%
NP236	1.649E-04	0.00%
NP237	3.024E+02	0.02%
NP238	1.672E-07	0.00%
NP239	2.354E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	2.183E-09	0.00%
PU238	4.083E+01	0.00%
PU239	4.339E+03	0.25%
PU240	1.352E+03	0.08%
PU241	8.140E+01	0.00%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	8.041E+02	0.05%
AM242	1.067E-05	0.00%
AM242M	8.919E-01	0.00%
AM243	2.740E+01	0.00%
CM242	2.157E-03	0.00%
CM243	3.518E-02	0.00%

CM244	7.404E-01	0.00%
CM245	1.338E-01	0.00%
CM246	8.151E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	7.501E-26	0.00%
CF250	1.326E-10	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 100 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	2.062E-04	0.00%
HE 3	2.174E-02	0.00%
HE 4	4.623E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.077E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	4.409E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.656E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	5.924E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	4.835E-05	0.00%
AR 38	8.095E-04	0.00%
AR 39	8.552E-07	0.00%
AR 40	1.425E-06	0.00%
K 39	2.551E-07	0.00%
K 40	3.251E-04	0.00%
K 41	7.264E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.004E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%

TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 54	1.803E-37	0.00%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	1.619E-12	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.463E+02	0.01%
CO 60	7.718E-06	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.473E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	1.334E+00	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.553E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.789E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	4.104E-03	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.851E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	2.487E-02	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.154E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.391E-03	0.00%
SR 88	2.369E+02	0.01%
SR 90	3.351E+01	0.00%
Y 89	3.100E+02	0.02%
Y 90	8.404E-03	0.00%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.346E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%

NB 93M	5.329E-03	0.00%
NB 94	3.027E-01	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.667E-04	0.00%
MO 94	9.108E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.140E+02	0.03%
RU 98	3.922E-13	0.00%
RU 99	1.695E-01	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RU106	1.217E-28	0.00%
RH102	1.324E-14	0.00%
RH103	3.138E+02	0.02%
RH106	1.144E-34	0.00%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.783E-02	0.00%
AG108	5.614E-13	0.00%
AG108M	1.778E-04	0.00%
AG109	4.311E+01	0.00%
AG109M	7.644E-34	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD109	7.738E-28	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD113M	1.154E-03	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.047E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN121M	3.948E-03	0.00%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.611E+01	0.00%
SB121	7.457E+00	0.00%
SB123	6.276E+00	0.00%
SB125	1.429E-10	0.00%
SB126	7.650E-07	0.00%
SB126M	5.817E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE125M	1.999E-12	0.00%
TE126	4.378E-01	0.00%
TE128	6.672E+01	0.00%

TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE128	1.201E+00	0.00%
XE129	4.781E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	1.397E-13	0.00%
CS135	2.810E+02	0.02%
CS137	7.519E+01	0.00%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	8.315E-02	0.00%
BA136	1.051E+01	0.00%
BA137	7.069E+02	0.04%
BA137M	1.150E-05	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
CE144	5.078E-37	0.00%
PR141	7.256E+02	0.04%
PR144	2.144E-41	0.00%
PR144M	1.071E-43	0.00%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	8.849E-09	0.00%
PM147	4.087E-10	0.00%
SM146	2.745E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	5.881E+00	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU150	2.326E-08	0.00%
EU151	6.836E+00	0.00%
EU152	3.000E-04	0.00%
EU153	6.491E+01	0.00%
EU154	4.578E-03	0.00%
EU155	5.384E-06	0.00%
GD152	2.522E+00	0.00%
GD154	4.371E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.783E-04	0.00%
ER166	1.626E-02	0.00%
ER167	2.354E-03	0.00%

ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
TM171	1.152E-23	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.895E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	9.418E-10	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.808E-09	0.00%
IR191	4.336E-07	0.00%
IR192	4.051E-14	0.00%
IR193	1.316E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	4.501E-11	0.00%
TL206	4.895E-17	0.00%
TL207	2.739E-13	0.00%
TL208	5.605E-12	0.00%
TL209	2.896E-17	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.264E-01	0.00%
PB209	1.207E-13	0.00%
PB210	1.907E-07	0.00%
PB211	2.118E-12	0.00%
PB212	3.305E-09	0.00%
PB214	7.967E-13	0.00%
BI208	2.759E-06	0.00%
BI209	4.000E-01	0.00%
BI210	1.174E-10	0.00%
BI210M	1.887E-05	0.00%
BI211	1.250E-13	0.00%
BI212	3.135E-10	0.00%
BI213	2.835E-14	0.00%
BI214	5.916E-13	0.00%
PO210	3.241E-09	0.00%
PO211	1.534E-18	0.00%
PO212	1.659E-20	0.00%
PO213	4.253E-23	0.00%
PO214	8.139E-20	0.00%
PO215	1.774E-18	0.00%
PO216	1.319E-14	0.00%
PO218	9.239E-14	0.00%

AT217	3.406E-19	0.00%
RN219	4.020E-15	0.00%
RN220	4.980E-12	0.00%
RN222	1.698E-10	0.00%
FR221	3.093E-15	0.00%
FR223	1.865E-14	0.00%
RA223	1.021E-09	0.00%
RA224	2.884E-08	0.00%
RA225	1.398E-11	0.00%
RA226	2.642E-05	0.00%
RA228	3.837E-12	0.00%
AC225	9.443E-12	0.00%
AC227	7.228E-07	0.00%
AC228	4.005E-16	0.00%
TH227	1.678E-09	0.00%
TH228	5.604E-06	0.00%
TH229	2.577E-06	0.00%
TH230	6.069E-02	0.00%
TH231	5.111E-08	0.00%
TH232	9.050E-03	0.00%
TH234	1.387E-05	0.00%
PA231	1.484E-03	0.00%
PA233	1.248E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	2.089E-04	0.00%
U233	1.071E-02	0.00%
U234	2.273E+02	0.01%
U235	1.257E+04	0.73%
U236	3.069E+03	0.18%
U237	2.271E-07	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP235	2.752E-34	0.00%
NP236	1.649E-04	0.00%
NP237	3.674E+02	0.02%
NP238	1.331E-07	0.00%
NP239	2.344E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	3.679E-10	0.00%
PU238	2.763E+01	0.00%
PU239	4.333E+03	0.25%
PU240	1.345E+03	0.08%
PU241	7.334E+00	0.00%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	8.122E+02	0.05%
AM242	8.493E-06	0.00%
AM242M	7.100E-01	0.00%
AM243	2.727E+01	0.00%
CM242	1.717E-03	0.00%
CM243	1.043E-02	0.00%
CM244	1.092E-01	0.00%
CM245	1.333E-01	0.00%
CM246	8.093E-03	0.00%
CM247	5.007E-05	0.00%
CM248	1.652E-06	0.00%
BK249	4.971E-43	0.00%
CF250	9.373E-12	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 200 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	7.526E-07	0.00%
HE 3	2.182E-02	0.00%
HE 4	7.354E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.052E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	3.963E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.387E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	5.925E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.112E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	9.609E-05	0.00%
AR 38	8.095E-04	0.00%
AR 39	6.610E-07	0.00%
AR 40	1.425E-06	0.00%
K 39	4.494E-07	0.00%
K 40	3.251E-04	0.00%
K 41	8.125E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.003E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%

TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	4.278E-24	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.463E+02	0.01%
CO 60	1.497E-11	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.472E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	6.279E-01	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.624E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.784E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	8.145E-03	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.851E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	3.869E-05	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.391E-03	0.00%
SR 88	2.369E+02	0.01%
SR 90	3.101E+00	0.00%
Y 89	3.100E+02	0.02%
Y 90	7.776E-04	0.00%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.346E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.586E+02	0.01%
NB 93M	5.359E-03	0.00%

NB 94	3.017E-01	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.595E-04	0.00%
MO 94	9.118E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.138E+02	0.03%
RU 98	7.811E-13	0.00%
RU 99	3.368E-01	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH102	5.514E-25	0.00%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	4.908E-02	0.00%
AG108	3.254E-13	0.00%
AG108M	1.030E-04	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD113M	9.973E-06	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN121M	9.864E-04	0.00%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.609E+01	0.00%
SB121	7.459E+00	0.00%
SB123	6.276E+00	0.00%
SB125	1.937E-21	0.00%
SB126	7.646E-07	0.00%
SB126M	5.812E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE125M	2.709E-23	0.00%
TE126	4.491E-01	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE128	1.201E+00	0.00%
XE129	5.281E-03	0.00%

XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	3.515E-28	0.00%
CS135	2.810E+02	0.02%
CS137	7.459E+00	0.00%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	9.198E-02	0.00%
BA136	1.051E+01	0.00%
BA137	7.746E+02	0.04%
BA137M	1.141E-06	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	2.976E-14	0.00%
PM147	1.371E-21	0.00%
SM146	2.745E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	2.722E+00	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU150	3.390E-09	0.00%
EU151	9.996E+00	0.00%
EU152	1.835E-06	0.00%
EU153	6.491E+01	0.00%
EU154	1.447E-06	0.00%
EU155	4.581E-12	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.570E-04	0.00%
ER166	1.629E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
TM171	2.414E-39	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%

YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.895E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	1.873E-09	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.808E-09	0.00%
IR191	4.336E-07	0.00%
IR192	3.038E-14	0.00%
IR193	1.322E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	8.944E-11	0.00%
TL206	4.895E-17	0.00%
TL207	5.730E-13	0.00%
TL208	2.141E-12	0.00%
TL209	1.115E-16	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.265E-01	0.00%
PB209	4.646E-13	0.00%
PB210	1.001E-06	0.00%
PB211	4.433E-12	0.00%
PB212	1.262E-09	0.00%
PB214	3.201E-12	0.00%
BI208	2.759E-06	0.00%
BI209	4.000E-01	0.00%
BI210	6.160E-10	0.00%
BI210M	1.887E-05	0.00%
BI211	2.616E-13	0.00%
BI212	1.198E-10	0.00%
BI213	1.091E-13	0.00%
BI214	2.376E-12	0.00%
PO210	1.702E-08	0.00%
PO211	3.209E-18	0.00%
PO212	6.335E-21	0.00%
PO213	1.638E-22	0.00%
PO214	3.269E-19	0.00%
PO215	3.712E-18	0.00%
PO216	5.037E-15	0.00%
PO218	3.712E-13	0.00%
AT217	1.312E-18	0.00%
RN219	8.412E-15	0.00%
RN220	1.902E-12	0.00%
RN222	6.824E-10	0.00%
FR221	1.191E-14	0.00%
FR223	3.905E-14	0.00%
RA223	2.137E-09	0.00%
RA224	1.101E-08	0.00%

RA225	5.385E-11	0.00%
RA226	1.062E-04	0.00%
RA228	8.437E-12	0.00%
AC225	3.637E-11	0.00%
AC227	1.513E-06	0.00%
AC228	8.807E-16	0.00%
TH227	3.511E-09	0.00%
TH228	2.140E-06	0.00%
TH229	9.921E-06	0.00%
TH230	1.263E-01	0.00%
TH231	5.116E-08	0.00%
TH232	1.800E-02	0.00%
TH234	1.387E-05	0.00%
PA231	2.698E-03	0.00%
PA233	1.654E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	7.977E-05	0.00%
U233	2.435E-02	0.00%
U234	2.425E+02	0.01%
U235	1.258E+04	0.73%
U236	3.083E+03	0.18%
U237	1.850E-09	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP236	1.647E-04	0.00%
NP237	4.869E+02	0.03%
NP238	8.437E-08	0.00%
NP239	2.322E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	3.677E-10	0.00%
PU238	1.268E+01	0.00%
PU239	4.320E+03	0.25%
PU240	1.331E+03	0.08%
PU241	5.977E-02	0.00%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	6.983E+02	0.04%
AM242	5.383E-06	0.00%
AM242M	4.500E-01	0.00%
AM243	2.702E+01	0.00%
CM242	1.088E-03	0.00%
CM243	9.163E-04	0.00%
CM244	2.377E-03	0.00%
CM245	1.322E-01	0.00%
CM246	7.976E-03	0.00%
CM247	5.006E-05	0.00%
CM248	1.652E-06	0.00%
CF250	4.683E-14	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 300 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	2.747E-09	0.00%
HE 3	2.182E-02	0.00%
HE 4	9.643E+00	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	2.028E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	3.563E-10	0.00%
P 31	5.169E+01	0.00%
P 32	2.145E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	5.926E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.112E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.438E-04	0.00%
AR 38	8.095E-04	0.00%
AR 39	5.108E-07	0.00%
AR 40	1.425E-06	0.00%
K 39	5.995E-07	0.00%
K 40	3.251E-04	0.00%
K 41	8.986E-06	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.002E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%

TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 55	1.130E-35	0.00%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.464E+02	0.01%
CO 60	2.901E-17	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.471E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	2.956E-01	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.658E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.781E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	1.218E-02	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.850E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	6.018E-08	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.391E-03	0.00%
SR 88	2.369E+02	0.01%
SR 90	2.869E-01	0.00%
Y 89	3.100E+02	0.02%
Y 90	7.195E-05	0.00%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.345E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.587E+02	0.01%
NB 93M	5.359E-03	0.00%

NB 94	3.006E-01	0.00%
MO 92	1.418E+00	0.00%
MO 93	3.525E-04	0.00%
MO 94	9.129E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.137E+02	0.03%
RU 98	1.170E-12	0.00%
RU 99	5.040E-01	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH102	2.297E-35	0.00%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	5.032E-02	0.00%
AG108	1.885E-13	0.00%
AG108M	5.969E-05	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD113M	8.616E-08	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN121M	2.464E-04	0.00%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.608E+01	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB125	2.623E-32	0.00%
SB126	7.640E-07	0.00%
SB126M	5.809E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE125M	3.670E-34	0.00%
TE126	4.602E-01	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE128	1.201E+00	0.00%
XE129	5.780E-03	0.00%

XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS134	8.844E-43	0.00%
CS135	2.810E+02	0.02%
CS137	7.400E-01	0.00%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	1.007E-01	0.00%
BA136	1.051E+01	0.00%
BA137	7.813E+02	0.05%
BA137M	1.132E-07	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	1.001E-19	0.00%
PM147	4.595E-33	0.00%
SM146	2.745E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	1.260E+00	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU150	4.944E-10	0.00%
EU151	1.146E+01	0.00%
EU152	1.123E-08	0.00%
EU153	6.491E+01	0.00%
EU154	4.572E-10	0.00%
EU155	3.898E-18	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.370E-04	0.00%
ER166	1.631E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
TM171	5.057E-55	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%

YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.895E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	2.805E-09	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.809E-09	0.00%
IR191	4.336E-07	0.00%
IR192	2.279E-14	0.00%
IR193	1.328E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	1.339E-10	0.00%
TL206	4.895E-17	0.00%
TL207	8.729E-13	0.00%
TL208	8.173E-13	0.00%
TL209	2.675E-16	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.265E-01	0.00%
PB209	1.115E-12	0.00%
PB210	2.515E-06	0.00%
PB211	6.753E-12	0.00%
PB212	4.821E-10	0.00%
PB214	7.259E-12	0.00%
BI208	2.758E-06	0.00%
BI209	4.000E-01	0.00%
BI210	1.548E-09	0.00%
BI210M	1.887E-05	0.00%
BI211	3.984E-13	0.00%
BI212	4.573E-11	0.00%
BI213	2.619E-13	0.00%
BI214	5.390E-12	0.00%
PO210	4.275E-08	0.00%
PO211	4.889E-18	0.00%
PO212	2.419E-21	0.00%
PO213	3.929E-22	0.00%
PO214	7.415E-19	0.00%
PO215	5.655E-18	0.00%
PO216	1.924E-15	0.00%
PO218	8.418E-13	0.00%
AT217	3.147E-18	0.00%
RN219	1.281E-14	0.00%
RN220	7.263E-13	0.00%
RN222	1.548E-09	0.00%
FR221	2.858E-14	0.00%
FR223	5.947E-14	0.00%
RA223	3.255E-09	0.00%
RA224	4.205E-09	0.00%

RA225	1.292E-10	0.00%
RA226	2.408E-04	0.00%
RA228	1.266E-11	0.00%
AC225	8.728E-11	0.00%
AC227	2.304E-06	0.00%
AC228	1.321E-15	0.00%
TH227	5.349E-09	0.00%
TH228	8.173E-07	0.00%
TH229	2.381E-05	0.00%
TH230	1.949E-01	0.00%
TH231	5.121E-08	0.00%
TH232	2.700E-02	0.00%
TH234	1.387E-05	0.00%
PA231	3.910E-03	0.00%
PA233	2.000E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	3.046E-05	0.00%
U233	4.150E-02	0.00%
U234	2.495E+02	0.01%
U235	1.259E+04	0.73%
U236	3.097E+03	0.18%
U237	2.218E-11	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP236	1.647E-04	0.00%
NP237	5.887E+02	0.03%
NP238	5.347E-08	0.00%
NP239	2.301E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	3.675E-10	0.00%
PU238	5.846E+00	0.00%
PU239	4.308E+03	0.25%
PU240	1.316E+03	0.08%
PU241	7.166E-04	0.00%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	5.949E+02	0.03%
AM242	3.411E-06	0.00%
AM242M	2.852E-01	0.00%
AM243	2.676E+01	0.00%
CM242	6.898E-04	0.00%
CM243	8.048E-05	0.00%
CM244	5.175E-05	0.00%
CM245	1.311E-01	0.00%
CM246	7.859E-03	0.00%
CM247	5.006E-05	0.00%
CM248	1.651E-06	0.00%
CF250	2.343E-16	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 500 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	3.660E-14	0.00%
HE 3	2.182E-02	0.00%
HE 4	1.332E+01	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.137E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	1.979E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	2.878E-10	0.00%
P 31	5.169E+01	0.00%
P 32	1.734E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	5.928E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.111E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.392E-04	0.00%
AR 38	8.095E-04	0.00%
AR 39	3.051E-07	0.00%
AR 40	1.425E-06	0.00%
K 39	8.052E-07	0.00%
K 40	3.251E-04	0.00%
K 41	1.071E-05	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.001E-03	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%

TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.464E+02	0.01%
CO 60	1.091E-28	0.00%
NI 58	1.094E+04	0.63%
NI 59	1.468E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	6.550E-02	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.681E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.772E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	2.024E-02	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.841E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	1.456E-13	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.392E-03	0.00%
SR 88	2.369E+02	0.01%
SR 90	2.457E-03	0.00%
Y 89	3.100E+02	0.02%
Y 90	6.161E-07	0.00%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.345E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.587E+02	0.01%
NB 93M	5.359E-03	0.00%
NB 94	2.986E-01	0.00%

MO 92	1.418E+00	0.00%
MO 93	3.388E-04	0.00%
MO 94	9.149E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.954E-03	0.00%
TC 99	5.133E+02	0.03%
RU 98	1.948E-12	0.00%
RU 99	8.381E-01	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH102	3.986E-56	0.00%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	5.282E-02	0.00%
AG108	6.327E-14	0.00%
AG108M	2.004E-05	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD113M	6.435E-12	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN121M	1.537E-05	0.00%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.606E+01	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	7.630E-07	0.00%
SB126M	5.801E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	4.825E-01	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE128	1.201E+00	0.00%
XE129	6.773E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%

XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.810E+02	0.02%
CS137	7.283E-03	0.00%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	1.181E-01	0.00%
BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA137M	1.114E-09	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
PM146	1.132E-30	0.00%
SM146	2.745E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	2.701E-01	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU150	1.051E-11	0.00%
EU151	1.245E+01	0.00%
EU152	4.204E-13	0.00%
EU153	6.491E+01	0.00%
EU154	4.567E-17	0.00%
EU155	2.822E-30	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.003E-04	0.00%
ER166	1.634E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%

HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.400E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.895E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	4.668E-09	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR192	1.282E-14	0.00%
IR193	1.336E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	2.227E-10	0.00%
TL206	4.895E-17	0.00%
TL207	1.471E-12	0.00%
TL208	1.194E-13	0.00%
TL209	8.572E-16	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.317E-01	0.00%
PB207	2.285E-01	0.00%
PB208	5.265E-01	0.00%
PB209	3.572E-12	0.00%
PB210	7.644E-06	0.00%
PB211	1.138E-11	0.00%
PB212	7.041E-11	0.00%
PB214	2.023E-11	0.00%
BI208	2.757E-06	0.00%
BI209	4.000E-01	0.00%
BI210	4.703E-09	0.00%
BI210M	1.887E-05	0.00%
BI211	6.717E-13	0.00%
BI212	6.679E-12	0.00%
BI213	8.392E-13	0.00%
BI214	1.503E-11	0.00%
PO210	1.299E-07	0.00%
PO211	8.242E-18	0.00%
PO212	3.534E-22	0.00%
PO213	1.259E-21	0.00%
PO214	2.068E-18	0.00%
PO215	9.533E-18	0.00%
PO216	2.810E-16	0.00%
PO218	2.346E-12	0.00%
AT217	1.008E-17	0.00%
RN219	2.160E-14	0.00%
RN220	1.061E-13	0.00%
RN222	4.314E-09	0.00%
FR221	9.156E-14	0.00%
FR223	1.003E-13	0.00%
RA223	5.488E-09	0.00%
RA224	6.142E-10	0.00%
RA225	4.140E-10	0.00%
RA226	6.712E-04	0.00%
RA228	2.114E-11	0.00%
AC225	2.797E-10	0.00%
AC227	3.885E-06	0.00%
AC228	2.206E-15	0.00%

TH227	9.017E-09	0.00%
TH228	1.194E-07	0.00%
TH229	7.629E-05	0.00%
TH230	3.350E-01	0.00%
TH231	5.131E-08	0.00%
TH232	4.510E-02	0.00%
TH234	1.387E-05	0.00%
PA231	6.330E-03	0.00%
PA233	2.545E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	4.450E-06	0.00%
U233	8.434E-02	0.00%
U234	2.541E+02	0.01%
U235	1.262E+04	0.73%
U236	3.124E+03	0.18%
U237	6.661E-12	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP236	1.645E-04	0.00%
NP237	7.493E+02	0.04%
NP238	2.148E-08	0.00%
NP239	2.258E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	3.670E-10	0.00%
PU238	1.266E+00	0.00%
PU239	4.283E+03	0.25%
PU240	1.289E+03	0.07%
PU241	2.154E-04	0.00%
PU242	2.019E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	4.316E+02	0.03%
AM242	1.371E-06	0.00%
AM242M	1.146E-01	0.00%
AM243	2.627E+01	0.00%
CM242	2.771E-04	0.00%
CM243	6.212E-07	0.00%
CM244	2.451E-08	0.00%
CM245	1.290E-01	0.00%
CM246	7.633E-03	0.00%
CM247	5.006E-05	0.00%
CM248	1.650E-06	0.00%
CF250	3.136E-19	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 1000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
H 3	2.371E-26	0.00%
HE 3	2.182E-02	0.00%
HE 4	1.947E+01	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.136E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	1.863E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	1.689E-10	0.00%
P 31	5.169E+01	0.00%
P 32	1.017E-14	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	5.933E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.108E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	4.773E-04	0.00%
AR 38	8.095E-04	0.00%
AR 39	8.412E-08	0.00%
AR 40	1.425E-06	0.00%
K 39	1.026E-06	0.00%
K 40	3.251E-04	0.00%
K 41	1.498E-05	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.962E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%

TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.465E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	1.462E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	1.514E-03	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.753E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	4.032E-02	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.824E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 85	1.327E-27	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.393E-03	0.00%
SR 88	2.369E+02	0.01%
SR 90	1.667E-08	0.00%
Y 89	3.100E+02	0.02%
Y 90	4.179E-12	0.00%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.344E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.588E+02	0.01%
NB 93M	5.357E-03	0.00%
NB 94	2.936E-01	0.00%
MO 92	1.418E+00	0.00%

MO 93	3.068E-04	0.00%
MO 94	9.200E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.953E-03	0.00%
TC 99	5.125E+02	0.03%
RU 98	3.892E-12	0.00%
RU 99	1.672E+00	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	5.906E-02	0.00%
AG108	4.131E-15	0.00%
AG108M	1.309E-06	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD113M	3.102E-22	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN121M	1.495E-08	0.00%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.600E+01	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	7.603E-07	0.00%
SB126M	5.780E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	5.380E-01	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE128	1.201E+00	0.00%
XE129	9.247E-03	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%

CS133	7.535E+02	0.04%
CS135	2.809E+02	0.02%
CS137	6.998E-08	0.00%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	1.610E-01	0.00%
BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA137M	1.071E-14	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.745E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	5.741E-03	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU150	6.930E-16	0.00%
EU151	1.271E+01	0.00%
EU152	3.605E-24	0.00%
EU153	6.491E+01	0.00%
EU154	1.439E-34	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	2.249E-04	0.00%
ER166	1.642E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.400E-03	0.00%

TA181	4.056E-01	0.00%
TA182	4.895E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	9.325E-09	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR192	3.044E-15	0.00%
IR193	1.349E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	4.448E-10	0.00%
TL206	4.894E-17	0.00%
TL207	3.057E-12	0.00%
TL208	1.215E-15	0.00%
TL209	4.400E-15	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.320E-01	0.00%
PB207	2.286E-01	0.00%
PB208	5.266E-01	0.00%
PB209	1.833E-11	0.00%
PB210	3.366E-05	0.00%
PB211	2.364E-11	0.00%
PB212	7.167E-13	0.00%
PB214	7.838E-11	0.00%
BI208	2.754E-06	0.00%
BI209	4.000E-01	0.00%
BI210	2.070E-08	0.00%
BI210M	1.887E-05	0.00%
BI211	1.395E-12	0.00%
BI212	6.798E-14	0.00%
BI213	4.308E-12	0.00%
BI214	5.821E-11	0.00%
PO210	5.720E-07	0.00%
PO211	1.712E-17	0.00%
PO212	3.597E-24	0.00%
PO213	6.463E-21	0.00%
PO214	8.008E-18	0.00%
PO215	1.980E-17	0.00%
PO216	2.860E-18	0.00%
PO218	9.089E-12	0.00%
AT217	5.176E-17	0.00%
RN219	4.487E-14	0.00%
RN220	1.080E-15	0.00%
RN222	1.671E-08	0.00%
FR221	4.700E-13	0.00%
FR223	2.083E-13	0.00%
RA223	1.140E-08	0.00%
RA224	6.252E-12	0.00%
RA225	2.125E-09	0.00%
RA226	2.600E-03	0.00%
RA228	4.267E-11	0.00%
AC225	1.436E-09	0.00%
AC227	8.070E-06	0.00%
AC228	4.454E-15	0.00%
TH227	1.873E-08	0.00%
TH228	1.215E-09	0.00%
TH229	3.917E-04	0.00%
TH230	6.879E-01	0.00%

TH231	5.156E-08	0.00%
TH232	9.104E-02	0.00%
TH234	1.387E-05	0.00%
PA231	1.235E-02	0.00%
PA233	3.340E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	4.507E-08	0.00%
U233	2.244E-01	0.00%
U234	2.551E+02	0.01%
U235	1.268E+04	0.73%
U236	3.190E+03	0.18%
U237	6.394E-12	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP236	1.640E-04	0.00%
NP237	9.833E+02	0.06%
NP238	2.197E-09	0.00%
NP239	2.154E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	3.659E-10	0.00%
PU238	3.497E-02	0.00%
PU239	4.224E+03	0.24%
PU240	1.223E+03	0.07%
PU241	2.067E-04	0.00%
PU242	2.018E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	1.936E+02	0.01%
AM242	1.402E-07	0.00%
AM242M	1.172E-02	0.00%
AM243	2.506E+01	0.00%
CM242	2.835E-05	0.00%
CM243	3.251E-12	0.00%
CM244	1.013E-13	0.00%
CM245	1.238E-01	0.00%
CM246	7.091E-03	0.00%
CM247	5.006E-05	0.00%
CM248	1.649E-06	0.00%
CF250	3.017E-19	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 2000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
HE 3	2.182E-02	0.00%
HE 4	2.617E+01	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.136E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	1.650E-01	0.00%
N 14	1.382E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	5.813E-11	0.00%
P 31	5.169E+01	0.00%
P 32	3.501E-15	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	5.942E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.103E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	9.529E-04	0.00%
AR 38	8.095E-04	0.00%
AR 39	6.395E-09	0.00%
AR 40	1.425E-06	0.00%
K 39	1.104E-06	0.00%
K 40	3.251E-04	0.00%
K 41	2.348E-05	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.876E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%

TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.466E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	1.449E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	8.094E-07	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.712E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	8.014E-02	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.795E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.395E-03	0.00%
SR 88	2.369E+02	0.01%
SR 90	7.669E-19	0.00%
Y 89	3.100E+02	0.02%
Y 90	1.923E-22	0.00%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.340E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.592E+02	0.01%
NB 93M	5.355E-03	0.00%
NB 94	2.837E-01	0.00%
MO 92	1.418E+00	0.00%
MO 93	2.517E-04	0.00%
MO 94	9.298E-01	0.00%

MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.953E-03	0.00%
TC 99	5.108E+02	0.03%
RU 98	7.780E-12	0.00%
RU 99	3.338E+00	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	7.151E-02	0.00%
AG108	1.762E-17	0.00%
AG108M	5.579E-09	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD113M	7.209E-43	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN121M	1.415E-14	0.00%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.589E+01	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	7.551E-07	0.00%
SB126M	5.741E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	6.486E-01	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE128	1.201E+00	0.00%
XE129	1.417E-02	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.808E+02	0.02%

CS137	6.462E-18	0.00%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	2.461E-01	0.00%
BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA137M	9.886E-25	0.00%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.745E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	2.594E-06	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU150	3.011E-24	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	1.262E-04	0.00%
ER166	1.651E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.399E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.895E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%

W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	1.864E-08	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR192	1.715E-16	0.00%
IR193	1.358E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	8.891E-10	0.00%
TL206	4.893E-17	0.00%
TL207	6.012E-12	0.00%
TL208	2.609E-16	0.00%
TL209	2.217E-14	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.343E-01	0.00%
PB207	2.290E-01	0.00%
PB208	5.266E-01	0.00%
PB209	9.240E-11	0.00%
PB210	1.207E-04	0.00%
PB211	4.651E-11	0.00%
PB212	1.539E-13	0.00%
PB214	2.811E-10	0.00%
BI208	2.749E-06	0.00%
BI209	4.001E-01	0.00%
BI210	7.428E-08	0.00%
BI210M	1.886E-05	0.00%
BI211	2.744E-12	0.00%
BI212	1.460E-14	0.00%
BI213	2.171E-11	0.00%
BI214	2.087E-10	0.00%
PO210	2.052E-06	0.00%
PO211	3.367E-17	0.00%
PO212	7.723E-25	0.00%
PO213	3.257E-20	0.00%
PO214	2.872E-17	0.00%
PO215	3.895E-17	0.00%
PO216	6.141E-19	0.00%
PO218	3.260E-11	0.00%
AT217	2.608E-16	0.00%
RN219	8.825E-14	0.00%
RN220	2.319E-16	0.00%
RN222	5.994E-08	0.00%
FR221	2.368E-12	0.00%
FR223	4.096E-13	0.00%
RA223	2.242E-08	0.00%
RA224	1.343E-12	0.00%
RA225	1.071E-08	0.00%
RA226	9.325E-03	0.00%
RA228	8.701E-11	0.00%
AC225	7.234E-09	0.00%
AC227	1.587E-05	0.00%
AC228	9.082E-15	0.00%
TH227	3.684E-08	0.00%
TH228	2.609E-10	0.00%
TH229	1.974E-03	0.00%
TH230	1.389E+00	0.00%
TH231	5.204E-08	0.00%
TH232	1.857E-01	0.00%
TH234	1.387E-05	0.00%
PA231	2.430E-02	0.00%

PA233	3.856E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	9.031E-09	0.00%
U233	5.663E-01	0.00%
U234	2.545E+02	0.01%
U235	1.280E+04	0.74%
U236	3.310E+03	0.19%
U237	5.893E-12	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP236	1.630E-04	0.00%
NP237	1.135E+03	0.07%
NP238	2.299E-11	0.00%
NP239	1.961E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	3.637E-10	0.00%
PU238	7.061E-05	0.00%
PU239	4.106E+03	0.24%
PU240	1.100E+03	0.06%
PU241	1.906E-04	0.00%
PU242	2.014E+02	0.01%
PU243	1.785E-15	0.00%
PU244	4.614E-03	0.00%
AM241	3.895E+01	0.00%
AM242	1.467E-09	0.00%
AM242M	1.226E-04	0.00%
AM243	2.282E+01	0.00%
CM242	2.966E-07	0.00%
CM243	8.906E-23	0.00%
CM244	1.012E-13	0.00%
CM245	1.141E-01	0.00%
CM246	6.125E-03	0.00%
CM247	5.006E-05	0.00%
CM248	1.645E-06	0.00%
CF250	2.899E-19	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 5000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
HE 3	2.182E-02	0.00%
HE 4	3.770E+01	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.134E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	1.148E-01	0.00%
N 14	1.383E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	2.372E-12	0.00%
P 31	5.169E+01	0.00%
P 32	1.429E-16	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	5.970E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.089E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.373E-03	0.00%
AR 38	8.095E-04	0.00%
AR 39	2.809E-12	0.00%
AR 40	1.425E-06	0.00%
K 39	1.110E-06	0.00%
K 40	3.251E-04	0.00%
K 41	4.851E-05	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.628E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%

TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.470E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	1.412E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	1.236E-16	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.596E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	1.971E-01	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.695E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.403E-03	0.00%
SR 88	2.369E+02	0.01%
Y 89	3.100E+02	0.02%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.332E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.600E+02	0.01%
NB 93M	5.347E-03	0.00%
NB 94	2.561E-01	0.00%
MO 92	1.418E+00	0.00%
MO 93	1.389E-04	0.00%
MO 94	9.576E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%

MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.952E-03	0.00%
TC 99	5.058E+02	0.03%
RU 98	1.944E-11	0.00%
RU 99	8.300E+00	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.159E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	1.087E-01	0.00%
AG108	1.365E-24	0.00%
AG108M	4.325E-16	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN121M	1.200E-32	0.00%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.556E+01	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	7.395E-07	0.00%
SB126M	5.623E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	9.758E-01	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.112E+02	0.01%
XE128	1.201E+00	0.00%
XE129	2.891E-02	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.806E+02	0.02%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	5.003E-01	0.00%

BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.745E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	2.393E-16	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	2.232E-05	0.00%
ER166	1.663E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.399E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.894E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%

OS187	4.658E-08	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR192	3.069E-20	0.00%
IR193	1.361E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	2.222E-09	0.00%
TL206	4.889E-17	0.00%
TL207	1.467E-11	0.00%
TL208	2.973E-16	0.00%
TL209	1.605E-13	0.00%
PB204	1.376E-02	0.00%
PB205	1.923E-05	0.00%
PB206	2.634E-01	0.00%
PB207	2.313E-01	0.00%
PB208	5.266E-01	0.00%
PB209	6.691E-10	0.00%
PB210	5.402E-04	0.00%
PB211	1.135E-10	0.00%
PB212	1.754E-13	0.00%
PB214	1.258E-09	0.00%
BI208	2.733E-06	0.00%
BI209	4.020E-01	0.00%
BI210	3.324E-07	0.00%
BI210M	1.885E-05	0.00%
BI211	6.696E-12	0.00%
BI212	1.664E-14	0.00%
BI213	1.572E-10	0.00%
BI214	9.342E-10	0.00%
PO210	9.181E-06	0.00%
PO211	8.217E-17	0.00%
PO212	8.801E-25	0.00%
PO213	2.359E-19	0.00%
PO214	1.285E-16	0.00%
PO215	9.504E-17	0.00%
PO216	6.998E-19	0.00%
PO218	1.459E-10	0.00%
AT217	1.889E-15	0.00%
RN219	2.154E-13	0.00%
RN220	2.642E-16	0.00%
RN222	2.683E-07	0.00%
FR221	1.715E-11	0.00%
FR223	9.995E-13	0.00%
RA223	5.471E-08	0.00%
RA224	1.530E-12	0.00%
RA225	7.755E-08	0.00%
RA226	4.173E-02	0.00%
RA228	2.288E-10	0.00%
AC225	5.239E-08	0.00%
AC227	3.874E-05	0.00%
AC228	2.388E-14	0.00%
TH227	8.990E-08	0.00%
TH228	2.972E-10	0.00%
TH229	1.429E-02	0.00%
TH230	3.444E+00	0.00%
TH231	5.340E-08	0.00%
TH232	4.883E-01	0.00%
TH234	1.387E-05	0.00%
PA231	5.930E-02	0.00%
PA233	3.981E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	8.867E-09	0.00%
U233	1.664E+00	0.00%
U234	2.529E+02	0.01%

U235	1.313E+04	0.76%
U236	3.605E+03	0.21%
U237	4.614E-12	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP236	1.601E-04	0.00%
NP237	1.172E+03	0.07%
NP238	2.633E-17	0.00%
NP239	1.479E-05	0.00%
NP240M	7.720E-16	0.00%
PU236	3.572E-10	0.00%
PU238	1.565E-10	0.00%
PU239	3.771E+03	0.22%
PU240	8.000E+02	0.05%
PU241	1.492E-04	0.00%
PU242	2.003E+02	0.01%
PU243	1.784E-15	0.00%
PU244	4.614E-03	0.00%
AM241	3.221E-01	0.00%
AM242	1.680E-15	0.00%
AM242M	1.405E-10	0.00%
AM243	1.722E+01	0.00%
CM242	3.407E-13	0.00%
CM244	1.012E-13	0.00%
CM245	8.936E-02	0.00%
CM246	3.947E-03	0.00%
CM247	5.005E-05	0.00%
CM248	1.635E-06	0.00%
CF250	2.573E-19	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 10000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
HE 3	2.182E-02	0.00%
HE 4	5.196E+01	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.132E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	6.270E-02	0.00%
N 14	1.383E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	1.147E-14	0.00%
P 31	5.169E+01	0.00%
P 32	6.907E-19	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	6.015E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.065E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	4.719E-03	0.00%
AR 38	8.095E-04	0.00%
AR 39	7.133E-18	0.00%
AR 40	1.425E-06	0.00%
K 39	1.110E-06	0.00%
K 40	3.251E-04	0.00%
K 41	8.884E-05	0.00%
CA 40	1.932E+00	0.00%
CA 41	9.224E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%

TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.475E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	1.352E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 63	5.390E-33	0.00%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.409E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	3.839E-01	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.538E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.415E-03	0.00%
SR 88	2.369E+02	0.01%
Y 89	3.100E+02	0.02%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.318E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.614E+02	0.01%
NB 93M	5.336E-03	0.00%
NB 94	2.159E-01	0.00%
MO 92	1.418E+00	0.00%
MO 93	5.158E-05	0.00%
MO 94	9.981E-01	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%

MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.951E-03	0.00%
TC 99	4.977E+02	0.03%
RU 98	3.887E-11	0.00%
RU 99	1.646E+01	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.158E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	1.707E-01	0.00%
AG108	1.925E-36	0.00%
AG108M	6.094E-28	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.504E+01	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	7.143E-07	0.00%
SB126M	5.431E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	1.506E+00	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.111E+02	0.01%
XE128	1.201E+00	0.00%
XE129	5.346E-02	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.801E+02	0.02%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	9.229E-01	0.00%
BA136	1.051E+01	0.00%

BA137	7.821E+02	0.05%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.745E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM151	4.508E-33	0.00%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	1.243E-06	0.00%
ER166	1.665E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.399E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.892E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	9.316E-08	0.00%

OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR192	1.744E-26	0.00%
IR193	1.362E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	4.443E-09	0.00%
TL206	4.884E-17	0.00%
TL207	2.842E-11	0.00%
TL208	3.643E-16	0.00%
TL209	6.089E-13	0.00%
PB204	1.376E-02	0.00%
PB205	1.922E-05	0.00%
PB206	4.101E-01	0.00%
PB207	2.396E-01	0.00%
PB208	5.266E-01	0.00%
PB209	2.537E-09	0.00%
PB210	1.383E-03	0.00%
PB211	2.199E-10	0.00%
PB212	2.149E-13	0.00%
PB214	3.221E-09	0.00%
BI208	2.708E-06	0.00%
BI209	4.162E-01	0.00%
BI210	8.509E-07	0.00%
BI210M	1.883E-05	0.00%
BI211	1.297E-11	0.00%
BI212	2.039E-14	0.00%
BI213	5.962E-10	0.00%
BI214	2.392E-09	0.00%
PO210	2.350E-05	0.00%
PO211	1.592E-16	0.00%
PO212	1.078E-24	0.00%
PO213	8.944E-19	0.00%
PO214	3.290E-16	0.00%
PO215	1.841E-16	0.00%
PO216	8.575E-19	0.00%
PO218	3.735E-10	0.00%
AT217	7.162E-15	0.00%
RN219	4.172E-13	0.00%
RN220	3.237E-16	0.00%
RN222	6.867E-07	0.00%
FR221	6.503E-11	0.00%
FR223	1.937E-12	0.00%
RA223	1.059E-07	0.00%
RA224	1.874E-12	0.00%
RA225	2.941E-07	0.00%
RA226	1.068E-01	0.00%
RA228	4.866E-10	0.00%
AC225	1.987E-07	0.00%
AC227	7.503E-05	0.00%
AC228	5.079E-14	0.00%
TH227	1.741E-07	0.00%
TH228	3.643E-10	0.00%
TH229	5.419E-02	0.00%
TH230	6.718E+00	0.00%
TH231	5.543E-08	0.00%
TH232	1.039E+00	0.00%
TH234	1.387E-05	0.00%
PA231	1.148E-01	0.00%
PA233	3.976E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	8.604E-09	0.00%
U233	3.473E+00	0.00%
U234	2.500E+02	0.01%
U235	1.363E+04	0.79%

U236	3.928E+03	0.23%
U237	3.069E-12	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%
NP236	1.553E-04	0.00%
NP237	1.170E+03	0.07%
NP238	3.301E-27	0.00%
NP239	9.250E-06	0.00%
NP240M	7.719E-16	0.00%
PU236	3.466E-10	0.00%
PU238	1.963E-20	0.00%
PU239	3.272E+03	0.19%
PU240	4.708E+02	0.03%
PU241	9.926E-05	0.00%
PU242	1.985E+02	0.01%
PU243	1.784E-15	0.00%
PU244	4.614E-03	0.00%
AM241	3.099E-03	0.00%
AM242	2.106E-25	0.00%
AM242M	1.760E-20	0.00%
AM243	1.077E+01	0.00%
CM242	4.271E-23	0.00%
CM244	1.012E-13	0.00%
CM245	5.945E-02	0.00%
CM246	1.897E-03	0.00%
CM247	5.004E-05	0.00%
CM248	1.619E-06	0.00%
CF250	2.108E-19	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 20000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
HE 3	2.182E-02	0.00%
HE 4	7.132E+01	0.00%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.127E-04	0.00%
B 10	2.499E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	1.870E-02	0.00%
N 14	1.384E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	2.681E-19	0.00%
P 31	5.169E+01	0.00%
P 32	1.614E-23	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	6.105E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.017E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	9.329E-03	0.00%
AR 38	8.095E-04	0.00%
AR 39	4.598E-29	0.00%
AR 40	1.425E-06	0.00%
K 39	1.110E-06	0.00%
K 40	3.251E-04	0.00%
K 41	1.645E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	8.467E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%

TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.487E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	1.240E+01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	3.064E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	7.289E-01	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	9.226E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.439E-03	0.00%
SR 88	2.369E+02	0.01%
Y 89	3.100E+02	0.02%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.289E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.644E+02	0.01%
NB 93M	5.311E-03	0.00%
NB 94	1.535E-01	0.00%
MO 92	1.418E+00	0.00%
MO 93	7.112E-06	0.00%
MO 94	1.060E+00	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%

MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.947E-03	0.00%
TC 99	4.818E+02	0.03%
RU 98	7.766E-11	0.00%
RU 99	3.240E+01	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.157E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	2.942E-01	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.403E+01	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	6.665E-07	0.00%
SB126M	5.068E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	2.513E+00	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.111E+02	0.01%
XE128	1.201E+00	0.00%
XE129	1.025E-01	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.793E+02	0.02%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	1.766E+00	0.00%
BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%

LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.745E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.853E-09	0.00%
ER166	1.665E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.397E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.889E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	1.863E-07	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%

IR191	4.336E-07	0.00%
IR192	5.633E-39	0.00%
IR193	1.362E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	8.884E-09	0.00%
TL206	4.872E-17	0.00%
TL207	5.337E-11	0.00%
TL208	5.114E-16	0.00%
TL209	1.956E-12	0.00%
PB204	1.376E-02	0.00%
PB205	1.922E-05	0.00%
PB206	1.086E+00	0.00%
PB207	2.711E-01	0.00%
PB208	5.266E-01	0.00%
PB209	8.153E-09	0.00%
PB210	3.009E-03	0.00%
PB211	4.129E-10	0.00%
PB212	3.016E-13	0.00%
PB214	7.007E-09	0.00%
BI208	2.658E-06	0.00%
BI209	5.125E-01	0.00%
BI210	1.851E-06	0.00%
BI210M	1.878E-05	0.00%
BI211	2.436E-11	0.00%
BI212	2.861E-14	0.00%
BI213	1.916E-09	0.00%
BI214	5.203E-09	0.00%
PO210	5.113E-05	0.00%
PO211	2.989E-16	0.00%
PO212	1.514E-24	0.00%
PO213	2.874E-18	0.00%
PO214	7.158E-16	0.00%
PO215	3.457E-16	0.00%
PO216	1.203E-18	0.00%
PO218	8.125E-10	0.00%
AT217	2.301E-14	0.00%
RN219	7.834E-13	0.00%
RN220	4.544E-16	0.00%
RN222	1.493E-06	0.00%
FR221	2.090E-10	0.00%
FR223	3.636E-12	0.00%
RA223	1.990E-07	0.00%
RA224	2.631E-12	0.00%
RA225	9.451E-07	0.00%
RA226	2.324E-01	0.00%
RA228	1.046E-09	0.00%
AC225	6.383E-07	0.00%
AC227	1.409E-04	0.00%
AC228	1.092E-13	0.00%
TH227	3.270E-07	0.00%
TH228	5.113E-10	0.00%
TH229	1.741E-01	0.00%
TH230	1.272E+01	0.00%
TH231	5.870E-08	0.00%
TH232	2.233E+00	0.00%
TH234	1.387E-05	0.00%
PA231	2.157E-01	0.00%
PA233	3.963E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	8.101E-09	0.00%
U233	6.967E+00	0.00%
U234	2.445E+02	0.01%
U235	1.443E+04	0.84%
U236	4.230E+03	0.25%
U237	1.357E-12	0.00%
U238	9.550E+05	55.33%
U240	8.822E-14	0.00%

NP236	1.463E-04	0.00%
NP237	1.167E+03	0.07%
NP238	5.189E-47	0.00%
NP239	3.616E-06	0.00%
NP240M	7.719E-16	0.00%
PU236	3.263E-10	0.00%
PU238	3.085E-40	0.00%
PU239	2.459E+03	0.14%
PU240	1.631E+02	0.01%
PU241	4.390E-05	0.00%
PU242	1.950E+02	0.01%
PU243	1.783E-15	0.00%
PU244	4.613E-03	0.00%
AM241	1.318E-03	0.00%
AM242	3.311E-45	0.00%
AM242M	2.768E-40	0.00%
AM243	4.208E+00	0.00%
CM242	6.714E-43	0.00%
CM244	1.011E-13	0.00%
CM245	2.630E-02	0.00%
CM246	4.383E-04	0.00%
CM247	5.002E-05	0.00%
CM248	1.586E-06	0.00%
CF250	1.415E-19	0.00%
TOTAL	*1.725E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 50000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
HE 3	2.182E-02	0.00%
HE 4	9.939E+01	0.01%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.113E-04	0.00%
B 10	2.500E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	4.960E-04	0.00%
N 14	1.384E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
SI 32	3.424E-33	0.00%
P 31	5.169E+01	0.00%
P 32	2.062E-37	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	6.362E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	1.883E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	2.254E-02	0.00%
AR 38	8.095E-04	0.00%
AR 40	1.426E-06	0.00%
K 39	1.110E-06	0.00%
K 40	3.251E-04	0.00%
K 41	3.562E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	6.550E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%

V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.516E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	9.560E+00	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	2.225E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	1.568E+00	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	8.357E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.512E-03	0.00%
SR 88	2.369E+02	0.01%
Y 89	3.100E+02	0.02%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.204E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.729E+02	0.01%
NB 93M	5.240E-03	0.00%
NB 94	5.509E-02	0.00%
MO 92	1.418E+00	0.00%
MO 93	1.865E-08	0.00%
MO 94	1.159E+00	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%

MO100	5.914E+02	0.03%
TC 98	1.938E-03	0.00%
TC 99	4.370E+02	0.03%
RU 98	1.937E-10	0.00%
RU 99	7.721E+01	0.00%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.153E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	6.638E-01	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.139E+01	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	5.414E-07	0.00%
SB126M	4.116E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	5.146E+00	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.109E+02	0.01%
XE128	1.201E+00	0.00%
XE129	2.496E-01	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.768E+02	0.02%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	4.280E+00	0.00%
BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%

CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.744E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	1.149E-16	0.00%
ER166	1.665E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.394E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.877E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	4.658E-07	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%

IR193	1.362E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	2.220E-08	0.00%
TL206	4.839E-17	0.00%
TL207	1.097E-10	0.00%
TL208	9.835E-16	0.00%
TL209	6.773E-12	0.00%
PB204	1.376E-02	0.00%
PB205	1.921E-05	0.00%
PB206	5.868E+00	0.00%
PB207	4.635E-01	0.00%
PB208	5.266E-01	0.00%
PB209	2.822E-08	0.00%
PB210	7.195E-03	0.00%
PB211	8.488E-10	0.00%
PB212	5.802E-13	0.00%
PB214	1.676E-08	0.00%
BI208	2.511E-06	0.00%
BI209	1.518E+00	0.00%
BI210	4.427E-06	0.00%
BI210M	1.865E-05	0.00%
BI211	5.008E-11	0.00%
BI212	5.503E-14	0.00%
BI213	6.630E-09	0.00%
BI214	1.244E-08	0.00%
PO210	1.223E-04	0.00%
PO211	6.144E-16	0.00%
PO212	2.912E-24	0.00%
PO213	9.946E-18	0.00%
PO214	1.712E-15	0.00%
PO215	7.108E-16	0.00%
PO216	2.315E-18	0.00%
PO218	1.943E-09	0.00%
AT217	7.966E-14	0.00%
RN219	1.610E-12	0.00%
RN220	8.740E-16	0.00%
RN222	3.572E-06	0.00%
FR221	7.234E-10	0.00%
FR223	7.476E-12	0.00%
RA223	4.092E-07	0.00%
RA224	5.061E-12	0.00%
RA225	3.271E-06	0.00%
RA226	5.558E-01	0.00%
RA228	2.823E-09	0.00%
AC225	2.209E-06	0.00%
AC227	2.897E-04	0.00%
AC228	2.946E-13	0.00%
TH227	6.723E-07	0.00%
TH228	9.835E-10	0.00%
TH229	6.028E-01	0.00%
TH230	2.701E+01	0.00%
TH231	6.439E-08	0.00%
TH232	6.023E+00	0.00%
TH234	1.387E-05	0.00%
PA231	4.435E-01	0.00%
PA233	3.925E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	6.761E-09	0.00%
U233	1.650E+01	0.00%
U234	2.288E+02	0.01%
U235	1.584E+04	0.92%
U236	4.380E+03	0.25%
U237	1.175E-13	0.00%
U238	9.551E+05	55.34%
U240	8.822E-14	0.00%
NP236	1.221E-04	0.00%
NP237	1.155E+03	0.07%

NP239	2.160E-07	0.00%
NP240M	7.716E-16	0.00%
PU236	2.723E-10	0.00%
PU239	1.038E+03	0.06%
PU240	6.775E+00	0.00%
PU241	3.801E-06	0.00%
PU242	1.848E+02	0.01%
PU243	1.781E-15	0.00%
PU244	4.613E-03	0.00%
AM241	1.141E-04	0.00%
AM243	2.514E-01	0.00%
CM244	1.011E-13	0.00%
CM245	2.277E-03	0.00%
CM246	5.406E-06	0.00%
CM247	4.996E-05	0.00%
CM248	1.492E-06	0.00%
CF250	4.284E-20	0.00%
TOTAL	*1.726E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 100000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
HE 3	2.182E-02	0.00%
HE 4	1.163E+02	0.01%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.088E-04	0.00%
B 10	2.501E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	1.171E-06	0.00%
N 14	1.384E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
P 31	5.169E+01	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	6.753E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	1.679E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	4.263E-02	0.00%
AR 38	8.095E-04	0.00%
AR 40	1.427E-06	0.00%
K 39	1.110E-06	0.00%
K 40	3.251E-04	0.00%
K 41	5.843E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	4.270E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%

CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.549E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	6.199E+00	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	1.305E+00	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	2.488E+00	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	7.084E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.634E-03	0.00%
SR 88	2.369E+02	0.01%
Y 89	3.100E+02	0.02%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	6.065E+02	0.04%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	1.869E+02	0.01%
NB 93M	5.122E-03	0.00%
NB 94	9.989E-03	0.00%
MO 92	1.418E+00	0.00%
MO 93	9.291E-13	0.00%
MO 94	1.205E+00	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.922E-03	0.00%

TC 99	3.713E+02	0.02%
RU 98	3.858E-10	0.00%
RU 99	1.428E+02	0.01%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.146E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	1.277E+00	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	8.058E+00	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	3.828E-07	0.00%
SB126M	2.910E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	8.484E+00	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.107E+02	0.01%
XE128	1.201E+00	0.00%
XE129	4.943E-01	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.727E+02	0.02%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	8.420E+00	0.00%
BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%

PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.743E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
HO166M	3.294E-29	0.00%
ER166	1.665E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.389E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.858E-11	0.00%
W180	1.491E-02	0.00%
W182	2.612E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	9.315E-07	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR193	1.362E-08	0.00%
PT192	1.352E-07	0.00%

PT194	1.169E-09	0.00%
TL205	4.437E-08	0.00%
TL206	4.784E-17	0.00%
TL207	1.592E-10	0.00%
TL208	1.791E-15	0.00%
TL209	1.384E-11	0.00%
PB204	1.376E-02	0.00%
PB205	1.918E-05	0.00%
PB206	1.997E+01	0.00%
PB207	9.923E-01	0.00%
PB208	5.266E-01	0.00%
PB209	5.765E-08	0.00%
PB210	1.105E-02	0.00%
PB211	1.231E-09	0.00%
PB212	1.056E-12	0.00%
PB214	2.574E-08	0.00%
BI208	2.286E-06	0.00%
BI209	5.522E+00	0.00%
BI210	6.800E-06	0.00%
BI210M	1.844E-05	0.00%
BI211	7.265E-11	0.00%
BI212	1.002E-13	0.00%
BI213	1.355E-08	0.00%
BI214	1.911E-08	0.00%
PO210	1.879E-04	0.00%
PO211	8.913E-16	0.00%
PO212	5.301E-24	0.00%
PO213	2.032E-17	0.00%
PO214	2.629E-15	0.00%
PO215	1.031E-15	0.00%
PO216	4.215E-18	0.00%
PO218	2.985E-09	0.00%
AT217	1.627E-13	0.00%
RN219	2.336E-12	0.00%
RN220	1.591E-15	0.00%
RN222	5.487E-06	0.00%
FR221	1.477E-09	0.00%
FR223	1.085E-11	0.00%
RA223	5.935E-07	0.00%
RA224	9.214E-12	0.00%
RA225	6.681E-06	0.00%
RA226	8.537E-01	0.00%
RA228	5.811E-09	0.00%
AC225	4.513E-06	0.00%
AC227	4.202E-04	0.00%
AC228	6.065E-13	0.00%
TH227	9.752E-07	0.00%
TH228	1.791E-09	0.00%
TH229	1.232E+00	0.00%
TH230	4.145E+01	0.00%
TH231	6.756E-08	0.00%
TH232	1.240E+01	0.00%
TH234	1.387E-05	0.00%
PA231	6.434E-01	0.00%
PA233	3.862E-05	0.00%
PA234	2.088E-10	0.00%
PA234M	4.675E-10	0.00%
U232	5.002E-09	0.00%
U233	2.965E+01	0.00%
U234	2.054E+02	0.01%
U235	1.662E+04	0.96%
U236	4.380E+03	0.25%
U237	1.991E-15	0.00%
U238	9.551E+05	55.34%
U240	8.821E-14	0.00%
NP236	9.031E-05	0.00%
NP237	1.137E+03	0.07%
NP239	1.973E-09	0.00%
NP240M	7.714E-16	0.00%

PU236	2.015E-10	0.00%
PU239	2.460E+02	0.01%
PU240	3.376E-02	0.00%
PU241	6.439E-08	0.00%
PU242	1.690E+02	0.01%
PU243	1.777E-15	0.00%
PU244	4.611E-03	0.00%
AM241	1.933E-06	0.00%
AM243	2.295E-03	0.00%
CM244	1.011E-13	0.00%
CM245	3.857E-05	0.00%
CM246	3.560E-09	0.00%
CM247	4.985E-05	0.00%
CM248	1.346E-06	0.00%
CF250	5.846E-21	0.00%
TOTAL	*1.726E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 200000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
HE 3	2.182E-02	0.00%
HE 4	1.291E+02	0.01%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	1.043E-04	0.00%
B 10	2.502E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	6.518E-12	0.00%
N 14	1.384E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
P 31	5.169E+01	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	7.411E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	1.333E-01	0.00%
CL 37	1.340E+00	0.00%
AR 36	7.649E-02	0.00%
AR 38	8.095E-04	0.00%
AR 40	1.429E-06	0.00%
K 39	1.110E-06	0.00%
K 40	3.250E-04	0.00%
K 41	8.298E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.814E-04	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%

CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.585E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	2.606E+00	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	4.489E-01	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	3.344E+00	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	5.092E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	4.877E-03	0.00%
SR 88	2.369E+02	0.01%
Y 89	3.100E+02	0.02%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	5.797E+02	0.03%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	2.139E+02	0.01%
NB 93M	4.896E-03	0.00%
NB 94	3.286E-04	0.00%
MO 92	1.418E+00	0.00%
MO 93	2.308E-21	0.00%
MO 94	1.214E+00	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.890E-03	0.00%

TC 99	2.682E+02	0.02%
RU 98	7.651E-10	0.00%
RU 99	2.459E+02	0.01%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.134E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	2.494E+00	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	4.029E+00	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	1.914E-07	0.00%
SB126M	1.456E-09	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	1.251E+01	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.102E+02	0.01%
XE128	1.201E+00	0.00%
XE129	9.824E-01	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.646E+02	0.02%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	1.651E+01	0.00%
BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%

PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.740E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
ER166	1.665E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.378E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.821E-11	0.00%
W180	1.491E-02	0.00%
W182	2.613E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	1.863E-06	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR193	1.362E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%

TL205	8.865E-08	0.00%
TL206	4.674E-17	0.00%
TL207	1.865E-10	0.00%
TL208	3.434E-15	0.00%
TL209	2.500E-11	0.00%
PB204	1.376E-02	0.00%
PB205	1.914E-05	0.00%
PB206	5.843E+01	0.00%
PB207	2.349E+00	0.00%
PB208	5.267E-01	0.00%
PB209	1.042E-07	0.00%
PB210	1.342E-02	0.00%
PB211	1.443E-09	0.00%
PB212	2.025E-12	0.00%
PB214	3.126E-08	0.00%
BI208	1.893E-06	0.00%
BI209	2.080E+01	0.00%
BI210	8.257E-06	0.00%
BI210M	1.802E-05	0.00%
BI211	8.513E-11	0.00%
BI212	1.922E-13	0.00%
BI213	2.448E-08	0.00%
BI214	2.321E-08	0.00%
PO210	2.280E-04	0.00%
PO211	1.044E-15	0.00%
PO212	1.017E-23	0.00%
PO213	3.673E-17	0.00%
PO214	3.193E-15	0.00%
PO215	1.208E-15	0.00%
PO216	8.084E-18	0.00%
PO218	3.624E-09	0.00%
AT217	2.941E-13	0.00%
RN219	2.738E-12	0.00%
RN220	3.052E-15	0.00%
RN222	6.663E-06	0.00%
FR221	2.671E-09	0.00%
FR223	1.271E-11	0.00%
RA223	6.955E-07	0.00%
RA224	1.767E-11	0.00%
RA225	1.207E-05	0.00%
RA226	1.037E+00	0.00%
RA228	1.178E-08	0.00%
AC225	8.158E-06	0.00%
AC227	4.924E-04	0.00%
AC228	1.229E-12	0.00%
TH227	1.143E-06	0.00%
TH228	3.434E-09	0.00%
TH229	2.225E+00	0.00%
TH230	5.041E+01	0.00%
TH231	6.849E-08	0.00%
TH232	2.513E+01	0.00%
TH234	1.387E-05	0.00%
PA231	7.541E-01	0.00%
PA233	3.739E-05	0.00%
PA234	2.089E-10	0.00%
PA234M	4.675E-10	0.00%
U232	2.738E-09	0.00%
U233	4.798E+01	0.00%
U234	1.674E+02	0.01%
U235	1.684E+04	0.98%
U236	4.368E+03	0.25%
U237	5.715E-19	0.00%
U238	9.551E+05	55.34%
U240	8.813E-14	0.00%
NP236	4.942E-05	0.00%
NP237	1.101E+03	0.06%
NP239	1.859E-13	0.00%
NP240M	7.708E-16	0.00%
PU236	1.103E-10	0.00%

PU239	1.380E+01	0.00%
PU240	1.207E-06	0.00%
PU241	1.848E-11	0.00%
PU242	1.412E+02	0.01%
PU243	1.769E-15	0.00%
PU244	4.607E-03	0.00%
AM241	5.845E-10	0.00%
AM243	2.163E-07	0.00%
CM244	1.010E-13	0.00%
CM245	1.107E-08	0.00%
CM246	1.544E-15	0.00%
CM247	4.962E-05	0.00%
CM248	1.097E-06	0.00%
CF250	1.088E-22	0.00%
TOTAL	*1.726E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 500000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
HE 3	2.182E-02	0.00%
HE 4	1.570E+02	0.01%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	9.154E-05	0.00%
B 10	2.507E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
C 14	1.125E-27	0.00%
N 14	1.384E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
P 31	5.169E+01	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	8.679E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	6.680E-02	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.417E-01	0.00%
AR 38	8.095E-04	0.00%
AR 40	1.434E-06	0.00%
K 39	1.110E-06	0.00%
K 40	3.250E-04	0.00%
K 41	9.977E-04	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.392E-05	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%

CR 50	4.285E+02	0.02%
CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.610E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	1.938E-01	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	1.828E-02	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	3.775E+00	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	1.890E-06	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	5.606E-03	0.00%
SR 88	2.369E+02	0.01%
Y 89	3.100E+02	0.02%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	5.060E+02	0.03%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	2.879E+02	0.02%
NB 93M	4.274E-03	0.00%
NB 94	1.169E-08	0.00%
MO 92	1.418E+00	0.00%
MO 94	1.214E+00	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.799E-03	0.00%
TC 99	1.010E+02	0.01%

RU 98	1.867E-09	0.00%
RU 99	4.131E+02	0.02%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.099E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	6.068E+00	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	5.037E-01	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	2.393E-08	0.00%
SB126M	1.819E-10	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	1.604E+01	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.088E+02	0.01%
XE128	1.201E+00	0.00%
XE129	2.433E+00	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.417E+02	0.01%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	3.938E+01	0.00%
BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%

ND142	9.905E+00	0.00%
ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.732E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
ER166	1.665E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.347E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.711E-11	0.00%
W180	1.491E-02	0.00%
W182	2.613E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	4.658E-06	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR193	1.362E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	2.209E-07	0.00%

TL206	4.361E-17	0.00%
TL207	1.908E-10	0.00%
TL208	8.454E-15	0.00%
TL209	3.517E-11	0.00%
PB204	1.376E-02	0.00%
PB205	1.901E-05	0.00%
PB206	1.681E+02	0.01%
PB207	6.721E+00	0.00%
PB208	5.273E-01	0.00%
PB209	1.465E-07	0.00%
PB210	9.830E-03	0.00%
PB211	1.475E-09	0.00%
PB212	4.987E-12	0.00%
PB214	2.290E-08	0.00%
BI208	1.076E-06	0.00%
BI209	9.332E+01	0.01%
BI210	6.049E-06	0.00%
BI210M	1.681E-05	0.00%
BI211	8.707E-11	0.00%
BI212	4.730E-13	0.00%
BI213	3.443E-08	0.00%
BI214	1.700E-08	0.00%
PO210	1.671E-04	0.00%
PO211	1.068E-15	0.00%
PO212	2.503E-23	0.00%
PO213	5.166E-17	0.00%
PO214	2.339E-15	0.00%
PO215	1.235E-15	0.00%
PO216	1.990E-17	0.00%
PO218	2.655E-09	0.00%
AT217	4.136E-13	0.00%
RN219	2.800E-12	0.00%
RN220	7.512E-15	0.00%
RN222	4.882E-06	0.00%
FR221	3.757E-09	0.00%
FR223	1.300E-11	0.00%
RA223	7.113E-07	0.00%
RA224	4.350E-11	0.00%
RA225	1.698E-05	0.00%
RA226	7.594E-01	0.00%
RA228	2.957E-08	0.00%
AC225	1.148E-05	0.00%
AC227	5.036E-04	0.00%
AC228	3.086E-12	0.00%
TH227	1.169E-06	0.00%
TH228	8.453E-09	0.00%
TH229	3.130E+00	0.00%
TH230	3.713E+01	0.00%
TH231	6.852E-08	0.00%
TH232	6.308E+01	0.00%
TH234	1.387E-05	0.00%
PA231	7.712E-01	0.00%
PA233	3.392E-05	0.00%
PA234	2.089E-10	0.00%
PA234M	4.675E-10	0.00%
U232	4.488E-10	0.00%
U233	6.815E+01	0.00%
U234	1.011E+02	0.01%
U235	1.685E+04	0.98%
U236	4.329E+03	0.25%
U237	1.352E-29	0.00%
U238	9.551E+05	55.34%
U240	8.788E-14	0.00%
NP236	8.101E-06	0.00%
NP237	9.985E+02	0.06%
NP239	1.958E-14	0.00%
NP240M	7.689E-16	0.00%
PU236	1.808E-11	0.00%
PU239	2.439E-03	0.00%

PU240	3.573E-07	0.00%
PU241	4.371E-22	0.00%
PU242	8.253E+01	0.00%
PU243	1.746E-15	0.00%
PU244	4.595E-03	0.00%
AM241	1.382E-20	0.00%
AM243	2.279E-08	0.00%
CM244	1.008E-13	0.00%
CM245	2.619E-19	0.00%
CM246	9.566E-25	0.00%
CM247	4.897E-05	0.00%
CM248	5.944E-07	0.00%
CF250	7.027E-28	0.00%
TOTAL	*1.726E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.

LWR Radiological DATABASE
GRAMS BY ISOTOPE
REACTOR TYPE & BURNUP: BWR 21000
ENRICHMENT: 3.00%
DECAY TIME: 1000000 YEARS
DATA SENSITIVITY: All Isotopes greater than database cutoff

ISOTOPE	GRAMS/MTIHM	%TOTAL
H 1	6.987E+00	0.00%
H 2	7.630E-03	0.00%
HE 3	2.182E-02	0.00%
HE 4	1.942E+02	0.01%
LI 6	2.090E-02	0.00%
LI 7	1.085E+00	0.00%
BE 9	5.978E-04	0.00%
BE 10	7.371E-05	0.00%
B 10	2.512E-03	0.00%
B 11	9.825E-01	0.00%
C 12	1.880E+02	0.01%
C 13	6.483E+00	0.00%
N 14	1.384E+02	0.01%
N 15	5.543E-01	0.00%
O 16	1.346E+05	7.80%
O 17	5.449E+01	0.00%
O 18	3.096E+02	0.02%
F 19	1.070E+01	0.00%
NE 20	2.242E-04	0.00%
NE 21	7.539E-06	0.00%
NE 22	1.127E-05	0.00%
NA 23	1.498E+01	0.00%
MG 24	1.579E+00	0.00%
MG 25	2.058E-01	0.00%
MG 26	2.355E-01	0.00%
AL 27	1.708E+02	0.01%
SI 28	4.006E+02	0.02%
SI 29	2.103E+01	0.00%
SI 30	1.443E+01	0.00%
P 31	5.169E+01	0.00%
S 32	2.943E+01	0.00%
S 33	2.524E-01	0.00%
S 34	1.386E+00	0.00%
S 36	9.549E-03	0.00%
CL 35	3.753E+00	0.00%
CL 36	2.113E-02	0.00%
CL 37	1.340E+00	0.00%
AR 36	1.866E-01	0.00%
AR 38	8.095E-04	0.00%
AR 40	1.443E-06	0.00%
K 39	1.110E-06	0.00%
K 40	3.249E-04	0.00%
K 41	1.011E-03	0.00%
CA 40	1.932E+00	0.00%
CA 41	1.930E-07	0.00%
CA 42	1.352E-02	0.00%
CA 43	2.797E-03	0.00%
CA 44	4.599E-02	0.00%
CA 46	1.014E-04	0.00%
CA 48	4.540E-03	0.00%
SC 45	6.457E-05	0.00%
TI 46	3.588E+01	0.00%
TI 47	3.310E+01	0.00%
TI 48	3.336E+02	0.02%
TI 49	2.601E+01	0.00%
TI 50	2.461E+01	0.00%
V 50	3.890E-02	0.00%
V 51	1.553E+01	0.00%
CR 50	4.285E+02	0.02%

CR 52	8.617E+03	0.50%
CR 53	9.967E+02	0.06%
CR 54	2.575E+02	0.01%
MN 55	8.756E+02	0.05%
FE 54	1.575E+03	0.09%
FE 56	2.579E+04	1.49%
FE 57	6.305E+02	0.04%
FE 58	8.556E+01	0.00%
CO 59	1.612E+02	0.01%
NI 58	1.094E+04	0.63%
NI 59	2.545E-03	0.00%
NI 60	4.333E+03	0.25%
NI 61	1.946E+02	0.01%
NI 62	6.130E+02	0.04%
NI 64	1.611E+02	0.01%
CU 63	1.687E+01	0.00%
CU 65	6.556E+00	0.00%
ZN 64	1.914E+01	0.00%
ZN 66	1.134E+01	0.00%
ZN 67	1.680E+00	0.00%
ZN 68	7.869E+00	0.00%
ZN 70	2.700E-01	0.00%
GA 69	1.960E-02	0.00%
GA 71	3.202E-05	0.00%
GE 70	7.912E-05	0.00%
GE 72	1.236E-02	0.00%
GE 73	2.687E-02	0.00%
GE 74	5.876E-02	0.00%
GE 76	3.195E-01	0.00%
AS 75	1.256E-01	0.00%
SE 76	2.388E-03	0.00%
SE 77	6.752E-01	0.00%
SE 78	1.531E+00	0.00%
SE 79	8.809E-05	0.00%
SE 80	8.679E+00	0.00%
SE 82	2.220E+01	0.00%
BR 79	3.793E+00	0.00%
BR 81	1.435E+01	0.00%
KR 80	1.286E-04	0.00%
KR 81	3.625E-07	0.00%
KR 82	4.506E-01	0.00%
KR 83	3.046E+01	0.00%
KR 84	7.222E+01	0.00%
KR 86	1.280E+02	0.01%
RB 85	8.156E+01	0.00%
RB 87	1.646E+02	0.01%
SR 86	1.860E-01	0.00%
SR 87	6.821E-03	0.00%
SR 88	2.369E+02	0.01%
Y 89	3.100E+02	0.02%
ZR 90	2.658E+05	15.40%
ZR 91	5.864E+04	3.40%
ZR 92	9.066E+04	5.25%
ZR 93	4.034E+02	0.02%
ZR 94	9.416E+04	5.46%
ZR 96	1.588E+04	0.92%
NB 93	3.907E+02	0.02%
NB 93M	3.407E-03	0.00%
NB 94	4.499E-16	0.00%
MO 92	1.418E+00	0.00%
MO 94	1.214E+00	0.00%
MO 95	5.306E+02	0.03%
MO 96	1.695E+01	0.00%
MO 97	5.555E+02	0.03%
MO 98	5.238E+02	0.03%
MO100	5.914E+02	0.03%
TC 98	1.657E-03	0.00%
TC 99	1.985E+01	0.00%
RU 98	3.585E-09	0.00%

RU 99	4.943E+02	0.03%
RU100	4.074E+01	0.00%
RU101	4.904E+02	0.03%
RU102	4.723E+02	0.03%
RU104	3.141E+02	0.02%
RH103	3.138E+02	0.02%
PD104	9.758E+01	0.01%
PD105	2.212E+02	0.01%
PD106	1.861E+02	0.01%
PD107	1.042E+02	0.01%
PD108	7.878E+01	0.00%
PD110	2.577E+01	0.00%
AG107	1.178E+01	0.00%
AG109	4.311E+01	0.00%
CD106	3.074E-01	0.00%
CD108	2.187E-01	0.00%
CD110	1.527E+01	0.00%
CD111	1.779E+01	0.00%
CD112	1.495E+01	0.00%
CD113	1.472E-01	0.00%
CD114	2.279E+01	0.00%
CD116	6.653E+00	0.00%
IN113	1.048E+00	0.00%
IN115	2.030E+00	0.00%
SN112	7.972E+01	0.00%
SN114	5.503E+01	0.00%
SN115	2.981E+01	0.00%
SN116	1.223E+03	0.07%
SN117	6.615E+02	0.04%
SN118	2.064E+03	0.12%
SN119	7.517E+02	0.04%
SN120	2.805E+03	0.16%
SN122	4.091E+02	0.02%
SN124	5.042E+02	0.03%
SN126	1.575E-02	0.00%
SB121	7.461E+00	0.00%
SB123	6.276E+00	0.00%
SB126	7.480E-10	0.00%
SB126M	5.687E-12	0.00%
TE122	3.403E-01	0.00%
TE123	3.932E-03	0.00%
TE124	1.623E-01	0.00%
TE125	1.418E+01	0.00%
TE126	1.652E+01	0.00%
TE128	6.672E+01	0.00%
TE130	2.183E+02	0.01%
I127	3.308E+01	0.00%
I129	1.064E+02	0.01%
XE128	1.201E+00	0.00%
XE129	4.808E+00	0.00%
XE130	4.451E+00	0.00%
XE131	2.993E+02	0.02%
XE132	6.461E+02	0.04%
XE134	9.371E+02	0.05%
XE136	1.379E+03	0.08%
CS133	7.535E+02	0.04%
CS135	2.079E+02	0.01%
BA132	5.832E-04	0.00%
BA134	7.271E+01	0.00%
BA135	7.319E+01	0.00%
BA136	1.051E+01	0.00%
BA137	7.821E+02	0.05%
BA138	8.205E+02	0.05%
LA138	4.471E-03	0.00%
LA139	7.856E+02	0.05%
CE140	7.858E+02	0.05%
CE142	7.261E+02	0.04%
PR141	7.256E+02	0.04%
ND142	9.905E+00	0.00%

ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.718E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
ER166	1.665E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.296E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.532E-11	0.00%
W180	1.491E-02	0.00%
W182	2.613E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	9.314E-06	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR193	1.362E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	4.391E-07	0.00%
TL206	3.886E-17	0.00%

ND143	5.879E+02	0.03%
ND144	7.809E+02	0.05%
ND145	4.533E+02	0.03%
ND146	4.215E+02	0.02%
ND148	2.348E+02	0.01%
ND150	1.087E+02	0.01%
SM146	2.718E-03	0.00%
SM147	1.721E+02	0.01%
SM148	9.006E+01	0.01%
SM149	3.284E+00	0.00%
SM150	1.869E+02	0.01%
SM152	8.714E+01	0.01%
SM154	2.113E+01	0.00%
EU151	1.271E+01	0.00%
EU153	6.491E+01	0.00%
GD152	2.522E+00	0.00%
GD154	4.372E+01	0.00%
GD155	9.342E+00	0.00%
GD156	5.475E+02	0.03%
GD157	2.117E+00	0.00%
GD158	6.603E+02	0.04%
GD160	3.475E+02	0.02%
TB159	1.594E+01	0.00%
DY160	1.545E+00	0.00%
DY161	1.798E+00	0.00%
DY162	8.179E-01	0.00%
DY163	3.644E-01	0.00%
DY164	6.242E-02	0.00%
HO165	7.119E-02	0.00%
ER166	1.665E-02	0.00%
ER167	2.354E-03	0.00%
ER168	2.311E-03	0.00%
ER170	3.036E-09	0.00%
TM169	1.089E-05	0.00%
YB170	2.054E-06	0.00%
YB171	8.767E-08	0.00%
YB172	2.409E-09	0.00%
YB173	5.750E-10	0.00%
YB174	2.669E-11	0.00%
LU175	2.396E-02	0.00%
LU176	6.049E-04	0.00%
HF174	3.676E-02	0.00%
HF176	1.587E+00	0.00%
HF177	7.080E-01	0.00%
HF178	9.322E+00	0.00%
HF179	1.261E+01	0.00%
HF180	1.699E+01	0.00%
HF182	1.296E-03	0.00%
TA181	4.056E-01	0.00%
TA182	4.532E-11	0.00%
W180	1.491E-02	0.00%
W182	2.613E+00	0.00%
W183	2.264E+00	0.00%
W184	4.155E+00	0.00%
W186	2.925E+00	0.00%
RE185	2.156E-02	0.00%
RE187	6.719E-01	0.00%
OS186	6.805E-03	0.00%
OS187	9.314E-06	0.00%
OS188	7.144E-02	0.00%
OS189	1.328E-03	0.00%
OS190	1.110E-04	0.00%
OS192	6.810E-09	0.00%
IR191	4.336E-07	0.00%
IR193	1.362E-08	0.00%
PT192	1.352E-07	0.00%
PT194	1.169E-09	0.00%
TL205	4.391E-07	0.00%
TL206	3.886E-17	0.00%

U236	4.265E+03	0.25%

PU241	8.518E-40	0.00%
PU242	3.369E+01	0.00%
PU243	1.707E-15	0.00%
PU244	4.577E-03	0.00%
AM241	2.694E-38	0.00%
AM243	2.229E-08	0.00%
CM244	1.003E-13	0.00%
CM245	5.103E-37	0.00%
CM246	2.140E-33	0.00%
CM247	4.789E-05	0.00%
CM248	2.139E-07	0.00%
CF250	1.573E-36	0.00%
TOTAL	*1.726E+06	99.97%*

*This value was obtained by interpolating TOTALS values from ORIGEN2 runs to the specific burnup/enrichment/decay time combination you specified. Percentages have been calculated from this interpolated value and may not add up to 100 percent in all cases.